



Alaska Department of Transportation & Public Facilities REQUEST FOR PROPOSALS PACKAGE

(Procurement per Article 3 of AS 36.30)

PART

A

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ISSUING OFFICE

Agency Contact & Phone No..... : Christopher Bentz, P.E., (907) 269-0652
Contracting Division..... : State of Alaska, Department of Transportation & Public Facilities, Central Region
Design & Engineering Services

PROJECT

RFP NUMBER..... : 25202043
Project Numbers-State/Federal..... : CFHWY00564 / 001665
Project Site (City, Village, etc.)..... : Central Region, Alaska
Project Title & Contract Description..... : HSIP: Central Region Guardrail Inventory and Upgrade Design Services

The Contractor shall prepare an inventory by evaluating existing guardrail segments, end terminals, and associated hardware along several high speed routes in Central Region, Alaska for damage and adherence to current AKDOT&PF and FHWA standards. The results of the inventory shall be used to design and construct installation or updates to guardrail segments found to be in non-conformance with State and Federal standards. Services are anticipated to include: environmental activities, surveying, field investigation and data collection, design study report, public involvement, erosion and sediment control plan, plans, specifications, and estimate (PS&E), assistance during bidding, assistance with design project close out, and assistance during construction.

SCHEDULE & PAYMENT

Anticipated period for performance-Begin/End: February 2020 through December 2023

Estimated amount of proposed contract:

☐ Less than \$200,000 ☐ \$200,000 to \$250,000 ☐ \$500,000 to \$1,000,000 ☒ \$1,000,000 or greater

Proposed Method(s) of Payment:

☐ Fixed Price Plus Expenses (FPPE) ☐ Firm Fixed Price (FFP) ☒ Cost Plus Fixed Fee (CPFF)

☐ Other:

SUBMITTAL DEADLINE AND LOCATION

*OFFERORS ARE RESPONSIBLE TO ASSURE DELIVERY PRIOR TO DEADLINE (2 AAC 12.250).
ONLY PROPOSALS RECEIVED PRIOR TO THE FOLLOWING DATE AND TIME WILL BE OPENED.*

DATE: **December 18, 2019**

PREVAILING TIME: **4:00 PM**

HAND DELIVER ONLY DIRECTLY TO FOLLOWING LOCATION (and person, if named):

Kathleen A. Bridenbaugh, PSA Unit Supervisor
AK Department of Transportation & Public Facilities
4111 Aviation Avenue
Anchorage, AK 99502

IMPORTANT NOTICE: If you downloaded this solicitation from the State's Website, you must self-register for the Plan Holders list to receive subsequent addenda. Failure to register may adversely affect your proposal. It is the Offeror's responsibility to ensure that he has received all addenda affecting this RFP.

SELECTION PROCEDURE

1. Competitive Sealed Proposals will be evaluated by a committee (2 AAC 12, Article 4). Evaluation of responses to criteria set forth in Part C results in a numerical score for each proposal. Each criterion in Part C has an assigned weight for this RFP which demonstrates its relative importance. The total of all weights is 100 (100%). Each one- percent weight equates to a range of 0-5 points per Evaluator. The maximum points (score) obtainable for any proposal is equal to the product of 500 multiplied by the number of Evaluators.
2. Scoring of proposals will be accomplished as follows:
 - 2.1 Each Evaluator will individually read and rate each Offeror's response to each criterion described in Part C - Section I - Technical Proposal. Ratings will be based solely on contents of proposal and in compliance with the Contracting Agency's standard Instructions for Evaluation Committee. Except as may be stated within any criterion description in Part C, a rating of "5" = Best Response from all Offerors; "4" to "1" = Progressively Less Responsive; "0" = Non-Responsive. Ratings are multiplied by the assigned weights for each criterion to obtain criteria scores.
 - 2.2 After completion of individual ratings in Part C, Section 1, Technical Proposal, the Evaluation Committee will meet to discuss proposals. Evaluators may then alter their ratings; however, any changes shall be based solely on the criteria set forth in Part C.
 - 2.3 After scoring Part C - Section I - Technical Proposal, criteria scores for Part C - Section II - Preferences, and Section III - Price (if applicable), will be calculated based on criteria descriptions.
 - 2.4 The total score for each Offeror will be obtained by summing the scores determined for each criterion in Sections I, II and III of Part C. The order of ranking for negotiations shall be as follows: highest scored Offeror will be ranked first, next highest scored second, and etcetera.
3. Evaluators may discuss factual knowledge of, and may investigate Offerors' and proposed Subcontractors' prior work experience and performance, including projects referenced in proposal, available written evaluations, etcetera, and may contact listed references or other persons knowledgeable of a Contractor's and/or a Subcontractor's past performance. Factors such as overall experience relative to the proposed contract, quality of work, control of cost, and ability to meet schedules may be addressed. If any issues of significant concern to the proposed contract are discovered, the Committee may:
 - 3.1 Provide written recommendations for consideration during contract negotiations;
 - 3.2 Conduct discussions in accordance with paragraph 4, below.
4. The Committee may decide to conduct discussions (or "interviews") with responsible Offerors whose proposals are determined to be reasonably susceptible of being selected for award for the purpose of clarification to assure full understanding of, and responsiveness to, the solicitation requirements (AS 36.30.240 & 2 AAC 12.290). Offerors selected by the Committee for discussions may be permitted to submit Best and Final Offers (BAFO) for final Committee Evaluation. After discussions and any BAFOs, Evaluators will determine the final scoring and ranking for contract negotiations by evaluating written and oral responses using only the criteria set forth in Part C of this RFP (2 AAC 12.260(b)).
5. All Offerors will be advised of the Offeror selected for negotiation and, after completion of negotiations, a Notice of Intent to Award will be provided to all Offerors. If contract negotiations are unsuccessful with Offeror(s) selected for negotiation, the Contracting Agency may either cancel the solicitation or negotiate with other Offerors in the order of ranking.

NOTICES

PART

A

1. The Contracting Agency is an equal opportunity employer.
2. Copies of contract documents are available for review at the Contracting Agency's office. Offerors located outside the general vicinity of the Contracting Agency's office may telephone the Agency Contact identified on page one of this Part A for a discussion of such items.

General Conditions of the Professional Services Agreement are contained in the Small Procurement Standard Provisions Booklet, which is located on the Department's website under "Procurement."

The General Conditions are the **same** for both Competitive Sealed Proposals and Small Procurements.
3. Offerors are specifically advised that a contract shall not be in effect until a written agreement is executed by an authorized agent of the Contracting Agency. The Contracting Agency shall not be liable for any cost incurred by an Offeror in response to this solicitation, including any work done, even in good faith, prior to execution of a contract and issuance of a Notice to Proceed.
4. The Contracting Agency expressly reserves the right to waive minor informalities, negotiate changes or reject any and all proposals and to not award the proposed contract, if in its best interest. "Minor Informalities" means matters of form rather than substance which are evident from the submittal, or are insignificant matters that have a negligible effect on price, quantity, quality, delivery, or contractual conditions and can be waived or corrected without prejudice to other Offerors (2 AAC 12.990).
5. All proposals shall be open for public inspection (AS 36.30.230) after a Notice of Intent to Award is issued. Offerors should not include proprietary information in proposals if such information should not be disclosed to the public. Any language within a submittal purporting to render all or portions of a proposal confidential will be disregarded. Proprietary information which may be provided after selection for contract negotiations will be confidential if expressly agreed to by the Contracting Agency (AS 36.30.230).
6. Substitution for any personnel named in a proposal may result in termination of negotiations.
7. If it is discovered that a selected Offeror is in arrears on taxes due the State of Alaska, a contract may not be awarded until the Alaska Department of Revenue approves the payment provisions for the contract.
8. **Offerors and proposed subcontractors shall be in compliance with the statutory requirements for Alaska business licensing and professional registrations included in the certification statement on Page 2 of Part D in this RFP package.**
9. **PRICE COMPETITION:** Price cannot be an Evaluation Criterion in accordance with Article 3 of AS 36.30 for services that must be performed only by Architects, Engineers, Land Surveyors, or Landscape Architects (A/E, LS or LA)) licensed in the State of Alaska, UNLESS the provisions of AS 36.30.270(d) apply; i.e., unless the services required are repetitious in nature, and the nature and amount of services required are thoroughly defined by measurable and objective standards to reasonably enable firms or persons making proposals to compete with a clear understanding and interpretation of the services required. If price is a factor, a majority of the evaluation committee must be registered in Alaska to perform architectural, engineering, or land surveying services.
 - 9.1 If the services performed do not require an A/E, LS or LA, then all Offerors including any A/E, LS or LA must provide Price Proposals in accordance with AS 36.30.270(b) and 2 AAC 12.260(c).
 - 9.2 Price (or any estimate of labor hours) cannot be an Evaluation Criterion for contracts that will receive Federal-aid highway program funding per 23 CFR 172.7 and FAA Airport Improvement Program funding per AC 150/5100-14E, 2.1. For FAA exceptions: see AC 150/5100/14E, 2.4.
10. An audit of the selected Offerors' and proposed Subcontractors' cost accounting systems and business records may be required to ascertain if systems are adequate for segregating contract costs; to establish a maximum allowable Indirect Cost Rate for the Agency's negotiator; and to investigate the accuracy of proposed labor rates and unit prices. In order not to unduly delay contract negotiation or award, be prepared to submit Pre-Audit Statement, DOT&PF Form 25A257 immediately for your firm and any subcontract that may exceed \$250,000.

For contract amounts less than \$250,000, the Contracting Agency may require the Offeror and proposed Subcontractor to submit the Pre-Audit Statement if deemed necessary to determine allowable costs under Title 23 CFR requirements. If selected for negotiation, failure to submit properly completed Pre-Audit Statement(s) in a timely manner may disqualify an Offeror from further consideration. Information from Pre-Audit Statements and any Audit conducted for the Contracting Agency is considered proprietary and will be confidential.

11. Standard insurance provisions for Worker's Compensation, General and Automobile Liability, and Professional Liability are contained in DOT&PF Form 25A269, Indemnification and Insurance. Coverages may be modified under very limited circumstances. Offeror should not assume any modification of coverages.

12. Professional Liability Insurance for the proposed contract: ☐ is not required
☒ is required as shown on DOT&PF Form 25A269.

13. The proposed contract ☒ will ☐ will not be a Federally Assisted Program of the U.S. Department of Transportation. If it will be an assisted program, then the Offeror shall insert the following notification in all subcontract solicitations for bids or proposals pertinent to this RFP:

"In accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 USC 2000d to 2000d-4 and Title 49, CFR, U.S. Department of Transportation (U.S. DOT), Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. DOT issued pursuant to such Act, in any Subcontract entered into pursuant to this RFP, Disadvantaged Business Enterprise firms will be afforded full opportunity to submit bids or proposals and will not be discriminated against on the grounds of race, color, sex, or national origin, in consideration for an award.

14. Pre-proposal Conference: ☒ None ☐ As follows:

15. Special Notices:

15.1 Per Alaska Statute (AS) 36.30.210(e): An Alaska Business License is required of Contractors who do business in Alaska at time of award. To qualify for the Alaska Offerors' Preference, under AS 36.30.321, an Offeror shall have a valid Alaska business license as a prerequisite to proposal. Information regarding applying for an Alaska Business License can be found on-line at <https://www.commerce.alaska.gov/web/cbpl/BusinessLicensing.aspx> or by calling 1-907-465-2550. The business license must be in the name of the company under which the proposal is submitted.

15.2 Effective May 8, 2015, the Department, in coordination with the U.S. Department of Transportation, adopted a Race-Neutral Disadvantaged Business Enterprise (DBE) Program for its federal-aid program. The Race-Neutral DBE program applies to federally-funded construction-related professional services solicitations, with the exception of FAA-funded projects located within the boundaries of the Department's Northern Region, which remain under a Race-Conscious DBE program.

The Department encourages contractors to utilize DBEs in all Federal-aid projects to ensure the Department meets its overall DBE Utilization Goal. All DBE participation will count towards the Race-Neutral program. If you have any questions about this notice or the Department's DBE program, please contact the Civil Rights Office at (907) 269-0851 or refer to their website <http://www.dot.alaska.gov/cvlrts/index.shtml>

15.3 The Department intends to send notices (including Notice of Intent to Negotiate, and Notice of Intent to Award) to Offerors by using the email address provided the Offeror's submitted Part D. Such delivery of an email sent by the Department is complete upon receipt in the addressee's email account. An email sent after 4:30pm shall be deemed to have occurred at the opening of business on the next working day. By submitting a response to this RFP, all Offerors consent to the use of Electronic Mail as described herein.

15.4 Interested parties are reminded that the Agency point of contact is noted on page 1 of this section, and all questions and requests for information shall be directed to this individual.

15.5 The Contracting Agency anticipates providing the following services: electrical design, geotechnical investigations / recommendations, utility agreement preparation, ROW mapping, and hydrologic and hydraulic design. However, the Contracting Agency may authorize the Contractor to perform these services by contract amendment or by other means.

15.6 The following document is available to assist Offerors in preparing their proposal, and may be downloaded from the RFP website:

a.) HSIP Nomination (4 pages)

SUBMITTAL CHECKLIST

PART

B

Offeror may use left margin to check off items when completed.

An Alaska Business License is required of Contractors who do business in Alaska at time of award (AS 36.30.210(e)).

- [] 1. Offerors must carefully review this RFP Package for defects and questionable material, and become familiar with submittal requirements. Submit written comments to the address shown under "Submittal Deadline and Location" on page 1 of Part A - RFP. Substantive issues will be addressed in a written addendum to all RFP recipients on record. Failure to comply with directions may result in lower score and may eliminate a submittal from consideration. Protests based on alleged improprieties or ambiguities in a solicitation may be disallowed at the discretion of the Contracting Agency if the protest is not received in writing at least ten (10) Agency work days prior to the Submittal Deadline (AS 36.30.565).
- [] 2. Review Part A - RFP and the proposed Statement of Services and any other attached or referenced materials. If no Statement of Services is attached, telephone the Agency contact person identified on page 1 of Part A.
- [] 3. Review Part C - Evaluation Criteria. Read each criterion in light of the proposed Statement of Services. Note any project specific criteria which may have been added or any changes to standard criteria descriptions which may have been made. Be aware of the assigned weight for each criterion. If a weight is not entered for any criterion on Part C, notify the Agency contact person. Plan your proposal to address the applicable criteria. Criteria Responses shall not exceed the number of pages stated below. **Note:** If weight is applied to Criterion #11, Alaska Bidder (Offeror) Preference, that box must be checked on page 1 of Part D, rfp-d.
- [] 4. Prepare a distinct Response for each criterion that has a weight more than zero. Failure to respond directly to any criteria weighted more than zero will result in an evaluation score of zero for that criteria. Any Responses to criteria weighted zero will be disregarded. Acceptable Responses must be specific and directly related to the Contracting Agency's proposed Statement of Services. Marketing brochures, federal SF330s, marketing resumes, and other non-project specific materials will be discarded without evaluation and should not be submitted.
- [] 5. **Each criterion Response must be titled, numbered and assembled in the order in which the criteria are listed in Part C**, so the criterion to which information applies shall be plainly evident. Material not so identified or assembled may be discarded without evaluation.
- [] 6. Price ☐ is ☒ is not an evaluation criterion for the proposed contract.
If Price is a Criterion, prepare **Billing Rates and/or Price Proposals** as described in Criteria #12 and/or #13.
- [] 7. Complete all entries on Part D - Proposal Form. Note the statutory requirements for Alaska business licenses and professional registrations, and be sure to sign and date the Certification. Copies of licenses and registrations may be provided with submittal, and will not count in the requirements of #8 below.

- [] 8. Attach Criteria Responses (**except any Billing Rates or Price Proposals**) to Part D - Proposal Form. The maximum number of attached pages (**each printed side equals one page**) for Criteria Responses shall not exceed: **Ten (10) pages**. Attached page limit does not include the four-page Part D - Proposal Form, or any Billing Rates or Price Proposals.

Criteria Responses shall be presented in **8-1/2" X 11" format**, except for a minimal number of larger sheets (e.g., 11" x 17") that may be used (e.g., for schedules) if they are folded to 8-1/2" X 11" size. Large sheets will count as multiple pages at 93.5 square inches or fraction thereof per page, unless otherwise noted.

CAUTION: Criteria Responses which do not comply with the required page limit or presentation size, may result in disqualification. Further, small print or typeface that is difficult to read may negatively influence evaluation of your submittal and affect scoring for "Quality of Proposal."

CHECKLIST IS CONTINUED NEXT PAGE

[] 9. N/A

[] 10. Parts A, B and C of Form 25A270 and the proposed Statement of Services shall not be returned to the Contracting Agency. **Submittals shall consist of the following applicable items assembled as follows and in the order listed:**

[] 10.1 Completed Part D - Proposal Form (generally at least one copy with original signature) and Responses to all evaluation criteria -- **except Billing Rates, Price Proposals** – attached. Each copy shall be fastened with one staple in the upper left corner. No other form of binding shall be used and no cover and no transmittal letter will be included. **CAUTION:** Failure to comply with this instruction will negatively influence evaluation of Submittal.

[] 10.2 Number of copies of Part D (**all pages**) and Criteria Responses (**except Billing Rates, and Price Proposals**) required is: **Six (6)**.

[] 10.3 If **Billing Rates and/or Price Proposals** are required, **one copy** bound with one staple in the upper left corner separately enclosed in a sealed envelope marked on the outside to identify it as a **Billing Rates or Price Proposal** and the names of the Project and Offeror. Each **Billing Rates or Price Proposal** must be signed and dated by the person who prepares it (may be different signatures for each Subcontractor).

[] 10.4 If Item 9, above, is completed for this RFP Package, any submittal items described therein. Unless otherwise stated, one copy only, bound appropriately.

[] 10.5 Pre-Audit Statement, DOT&PF Form 25A257, shall **not** be provided with Submittal. (See Notice #10 on page 3 of Part A - RFP.)

[] 10.6 **CAUTION:** If you replicate (other than by photocopy) Part D or any form in lieu of completing the forms provided by the Contracting Agency, provide a signed certification that lists such forms and attests that they are exact replicas of that issued by the Contracting Agency. Changed forms may result in rejection at the Contracting Agency's discretion. Any alteration – other than completion of the required entries – may be cause for rejection without recourse.

[] 11. Deliver **submittals in one sealed package** to the location and before the submittal deadline cited in Part A - RFP. **Mark the outside of the package** to identify the Project and the Offeror. Proposals must be received prior to the specified date and time. Late proposals will not be opened (2 AAC 12.250).

EVALUATION CRITERIA

PART

C

Criteria with a weight of zero are not applicable and should be disregarded. If a weight is not indicated for any criterion, telephone the Agency Contact person identified at the top of page 1 of Part A - RFP.

SECTION I - TECHNICAL PROPOSAL

1. Objectives and Services

1. Weight: 15

Response must **demonstrate your comprehension of the objectives and services** for the proposed contract. Do not merely duplicate the Statement of Services provided with this RFP. Also, consider if Statement of Services is sufficiently explicit; are expressed or implied schedules attainable/economically feasible; etcetera? Explain. **Define any assumptions made** in formulating Criteria Response. If design services for a construction project are included, express any opinions regarding alternative design considerations that could impact construction costs.

2. Methods

2. Weight: 20

Response must outline the methods for accomplishing the proposed contract or, if methodology is contained in the proposed Statement of Services, address its adequacy. Describe what, when, where, how, and in what sequence the work will be done. Address how proximity to the Project site, *particular* geographic familiarity, experience, and capabilities of your firms (Offeror and Proposed Subcontractors) and Project Staff might *specifically* contribute to the proposed methods. Identify the amount and type of work to be performed by any Subcontractors. Consider how each task may be carried out; what services or interaction required from/with the Contracting Agency; etcetera. Suggest alternatives, if appropriate. Identify any **distinct and substantive qualifications** for undertaking the proposed contract such as the availability of specialized equipment or unique approaches or concepts **relevant to the required services** which the firms may use.

3. Management

3. Weight: 10

Response must describe the administrative and operational structures that will be used for performing the proposed contract. For example consider: who will have overall responsibility for the contract? Who will have direct responsibility for specific disciplines? What will the lines of authority be? For any individual who would be in "responsible-charge" (reference AS 08.48) as an Architect, Engineer, Land Surveyor or Landscape Architect, so state and list his/her Alaska professional registration number. A graphic depiction is preferred in your response to this criterion. Additionally, the Contracting Agency may want to inspect work products in progress and have a close ongoing working relationship with your Project Staff. Accordingly, your response should also identify where the various contract services will be performed, *in proximity to the Contracting Agency's office*, and how communications will be maintained between your Project Staff, the Contracting Agency, and (as applicable) any other government agencies or the public.

4. Proposed Project Staff

4. Weight: 20

Response must name the individuals to perform the following **FUNCTIONS** plus any other professional/technical functions you deem essential to perform the services (also see criterion #8):

1. Contract Management (contract compliance)
2. Project Management (single point-of-contact directly engaged in contract performance)
3. Civil Engineering*
4. Public Involvement
5. Environmental Analysis
6. Surveying*

*All personnel acting in responsible charge for all Architectural, Engineering, Land Surveying, and Landscape Architecture functions require an Alaska Registration and must be identified in your proposal.

Continued Next Page

Describe the work to be performed by the individuals you name to perform essential functions and detail their specific qualifications and substantive **experience directly related to the proposed contract**. A response prepared specifically for this proposal is required. Marketing resumes often include non-relevant information which may detract from the evaluation of proposal. Lists of projects are not useful. Focus on individual's specific duties and responsibilities and how project experience is relevant to the proposed contract.

For each person named, identify their: employer, professional discipline or job classification and state of residency. List at least 3 professional references (contact persons and telephone numbers) for each person.

5. Workload and Resources

5. Weight: 10

Response must: (1) discuss both current and potential time commitments of your proposed Project Staff to all clients; (2) discuss the projected workload of each firm (Offeror and Proposed Subcontractors) for all clients; and (3) demonstrate adequate support personnel, facilities and other resources to provide the services required. Provide a list of current contracts with the Contracting Agency in which your proposed Project Staff are participating (include all current contracts statewide with regions, divisions, etc.)

Briefly address capabilities for providing additional services and/or services under an accelerated schedule. Address capacity to reassign personnel, equipment and facilities whenever the proposed contract would not require such capabilities or was delayed.

6. Past Performance & Quality Control

6. Weight: 15

Response must describe previous projects the project team has worked on that are related in size and scope to this project. Describe the dollar amount of the projects and a brief narrative of the successes of the projects. Address how the experience will help your team to perform under this contract. Provide references (contact name and phone number) for each project. Indicate which of the proposed firms and project staff was involved in each project. The State reserves the right to investigate referenced projects, contact references and research other projects that the respondent has worked on.

Include in your response a description of your firm's quality control process and how this process has affected the quality of your deliverables. Use specific examples.

7. Quality of Proposal

7. Weight: 5

Offerors do not respond to this criterion. Committee members will rate this criterion based on their perception of the clarity, completeness and presentation of submittal. Note: This criterion is **NOT** used to evaluate color, graphics or other visual techniques except as they may detract from legibility.

8. Proposed Project Staff for Possible Added Services**8. Weight: 5**

Response must name the individuals, which are not anticipated in the initial Contract, but may be added by amendment, to perform the following **FUNCTIONS** plus any other professional/technical functions you deem essential to perform the services:

1. Electrical Engineering*
2. Hydrologic and Hydraulic Design
3. Geotechnical Investigations / Recommendations
4. Utility Agreements
5. Right of Way Mapping*

*All personnel acting in responsible charge for all Architectural, Engineering, Land Surveying, and Landscape Architecture functions require an Alaska Registration and must be identified in your proposal.

Briefly describe the work to be performed by the individuals you name to perform essential functions and detail their specific qualifications and substantive **experience directly related to the proposed contract**. A response prepared specifically for this proposal is required. Lists of projects are not useful. Focus on individual's specific duties and responsibilities and how project experience is relevant to the proposed contract.

For each person named, identify their: employer, professional discipline or job classification and state of residency. List at least three (3) professional references (contact name, telephone number and email address) for each person.

9. N/A**9. Weight: 0**

SECTION III - PRICE

If price is not an Evaluation Criterion, weights for both Criterion #12 and #13 shall be "0". If price is an Evaluation Criterion, the sum of weights for Criterion #12 and #13 shall be at least "10", and all Offerors shall submit Price Proposals in the specified format(s).

See item #9, under Notices in Part A – RFP, regarding statutory and regulatory provisions about price competition and item #10.3, in Part B – Submittal Checklist, regarding procedure for submittal of Billing Rates and/or Price Proposals. Cost terminology is explained on page 2 of the Pre-Audit Statement (DOT&PF Form 25A257).

CAUTION: Submittal of Offeror's or Subcontractor's "standard" rate schedules or other pricing documents which are not in required format will be non-responsive if they do not allow direct comparison with other responsive proposals.

Rates and costs proposed by the Offeror selected for contract negotiations may be investigated for reasonableness and allowability in accordance with AS 36.30.400, .420 & .480, 2 AAC 12.550 and the contract cost principles in 48 CFR Part 31. Unsupported rates and costs may be disallowed or result in termination of negotiations, or contract award. All proposed rates and the negotiated contract rates will be public information.

12. Labor Billing Rates (Required Format)

12. Weight: 0

Provide a proposed total hourly Billing Rate (i.e., inclusive of Direct Cost of Direct Labor, all Indirect Costs, and Fee) only for each of the job **FUNCTIONS** listed below. Note: Some of these functions may be performed by one or more employees of the Offeror or Subcontractors; consequently, an individual might be billed under the contract at different rates appropriate to the functions performed. **Only the maximum rate paid to any individual for each listed job function** – regardless of employer (Offeror or Subcontractor) – **must be provided and will be considered for this response**. Rates for lower paid individuals or for other job functions, if any, will be addressed during contract negotiations.

1. Contract Management	(Estimated at	% of total labor effort)
2. Project Management	(Estimated at	% of total labor effort)
3.	(Estimated at	% of total labor effort)
4.	(Estimated at	% of total labor effort)
5.	(Estimated at	% of total labor effort)

*In accordance with the submittal Checklist ('rfp-b'), item 10.3, *Billing Rates must be signed and dated by the person who prepares it (may be different signatures for each Subcontractor)*

Response will be scored as follows: The maximum hourly rates proposed for the job functions listed above will be multiplied by the percentage of total labor effort (estimated above) and then summed to obtain an aggregate rate for each Offeror. If more than one rate is provided for any job function, only the highest rate will be used. Each Offeror's score will be calculated using the following equation – except that the **score will be zero if a rate for each listed function is not provided by an Offeror**.

$$\frac{(\text{Lowest aggregate rate from all Offerors}) \times (\text{MPP}^*)}{(\text{Offeror's aggregate rate})} = \text{Offeror's Criterion Score}$$

*MPP = Maximum Possible Points = (5) x (Number of Evaluators) x (Weight)

If no federal funding, then per AS 36.30.250(b), aggregate rates shall be reduced for the above calculation by the following applicable percentages when the rates are from Offerors that **designate preferences on page one of Part D**.

- ALASKA BIDDER (OFFEROR) PREFERENCE [2 AAC 12.260(d)] 5%
- ALASKA VETERAN-OWNED BUSINESS PREFERENCE [AS 36.30.175] (maximum \$5000) 5%
- and only ONE of the following:
- EMPLOYMENT PROGRAM PREFERENCE [AS 36.30.170(c)] 15%
- DISABLED SOLE PROPRIETOR OR 50% DISABLED EMPLOYEES [AS 36.30.170(e & f)] 10%

To claim employment or disabled preference, Offeror must be on the appropriate Alaska Division of Vocational Rehabilitation list at the time designated for opening (i.e., receipt) of proposals.

13. Total Price Proposal (Required Format)**13. Weight: 0**

Provide proposed costs for all labor, subcontracts, equipment, expenses, etc., and a proposed amount for Fee. Submit a separate price proposal in the following format for the Offeror and for each Subcontract (first, second, third tier, etc.) that may exceed \$25,000. Each price proposal must be signed and dated by the person who prepares it. Note that the PRICES of the next lower tier subcontracts must be listed as COSTS in Item #4 (Other Direct Costs) of the price proposal for the next higher tier contractor so that the price of all subcontracts "roll-up" into the Offeror's total price proposal.

1. Show project title, project number, and Offeror or Subcontractor Name.
2. **Direct Costs of Direct Labor (DCDL)**
Show the estimated costs for each job classification of employees proposed for the contract. List under the following headings. Names required only for key staff and/or persons in "responsible-charge" (Ref: AS 08.48). **Hourly Rates must not include Indirect Costs or Fee.**

<u>Job Classification</u>	<u>Name</u>	<u>Total Hours</u>	<u>Rate(\$/hr)</u>	<u>Proposed Costs (\$)</u>
				Total DCDL: \$ _____

3. **Indirect Costs (IDC)**
These costs include what are generally referred to as 1) Fringe Benefits and 2) Overhead (including direct and indirect costs of Indirect Labor). Show the Proposed IDC Rate as a percentage of Direct Costs of Direct Labor and the product (IDC Amount) of that Rate multiplied by the total DCDL.

IDC Rate: _____ % IDC Amount: \$ _____

4. **Other Direct Costs (ODC)**
These costs include: subcontracts, equipment (company owned or rented), and reimbursable expenses (e.g., transportation, food and lodging, reproduction) – if not included in Indirect Costs. List proposed costs under the following headings. If multiples of an item required, list the proposed quantity, unit rate, and total cost for each. **Costs must be based on actual costs to the offeror or the subcontractor, without any profit or other markup.**

<u>Item</u>	<u>Quantity</u>	<u>Cost (\$/Unit)</u>	<u>Proposed Costs (\$)</u>
			Total ODC: \$ _____

5. **Total Proposed Cost**
Sum of DCDL + IDC + ODC

Total Cost: \$ _____

6. **Proposed Fee**
List a proposed amount (Contract Fee is generally negotiated using a structured Fee analysis of proposed costs).

Proposed Fee: \$ _____

7. **Total Proposed Price**
Sum of Total Proposed Cost plus Proposed FEE.

Total Price: \$ _____

8. *In accordance with the Submittal Checklist ('rfp-b'), item 10.3, Price Proposals must be signed and dated by the person who prepares it (may be a different signature for each subcontractor).*

Response will be scored as follows:
$$\frac{(\text{Lowest Total Proposed Price}) \times (\text{MPP}^*)}{(\text{Offeror's Total Proposed Price})} = \text{Criterion Score}$$

*MPP = Maximum Possible Points = (5) x (Number of Evaluators) x (Weight)

If no federal funding, then per AS 36.30.250(b), total price shall be reduced for the above calculation by the following applicable percentages when the prices are from Offerors designate preferences on page one of Part D.

- ALASKA BIDDER (OFFEROR) PREFERENCE [2 AAC 12.260(d)] 5%
- ALASKA VETERAN-OWNED BUSINESS PREFERENCE [AS 36.30.321(f)] (maximum \$5,000) 5%
- and only ONE of the following:
- EMPLOYMENT PROGRAM PREFERENCE [AS 36.30.321(b)] 15%
- DISABLED SOLE PROPRIETOR [AS 36.30.321(d) / (k)] 10%

To claim employment or disabled preference, Offeror must be on the appropriate Alaska Division of Vocational Rehabilitation list at the time designated for opening (i.e., receipt) of proposals.

Alaska Department of Transportation & Public Facilities

PROPOSAL FORM

PART

D

THIS FORM MUST BE THE FIRST PAGE OF PROPOSAL. Attach criteria responses as explained in Part B - Submittal Checklist. No transmittal letter or cover sheet will be used.

PROJECT

Project Numbers-State/Federal: CFHWY00564 / 001665
Project Title: HSIP: Central Region Guardrail Inventory and Upgrade Design Services
RFP No.: 25202043

OFFEROR (CONTRACTOR)

Contractor:
Street:
P.O. Box.....:
City, State, Zip:
Alaska Business License Number:
Federal Tax Identification No.....:
DOT&PF DBE Certification No. (if any):
Individual(s) to sign contract.....:
Title(s):
Type of business enterprise (check one).....: [] Corporation in the state of...:
[] Individual [] Partnership [] Other(specify).....:

ALASKA STATUTORY PREFERENCES (IF NO FEDERAL FUNDING)

Check the applicable preferences that you claim for the proposed contract (reference Criteria 11, 12 & 13 in Part C):
[] Alaska Bidder (Offeror) **AND>>** [] Veterans **AND>>** [] Employment Program **or** [] Disabled Persons

PROPOSED SUBCONTRACTOR(S)

<u>Service, Equipment, etc.</u>	<u>Subcontractor & Office Location</u>	<u>AK Business License No.</u>	<u>DOT&PF DBE Certification No.</u>
---------------------------------	--	--------------------------------	---

CERTIFICATIONS

I certify: that I am a duly authorized representative of the Contractor; that this Submittal accurately represents capabilities of the Contractor and Subcontractors identified herein for providing the services indicated; and that the requirements of the Certifications on page 2 and 3 of this Part D for 1) Alaska Licenses/Registrations, 2) Insurance, 3) Federal-Aid Contracts exceeding \$100,000, 4) Cost and Pricing Data, 5) Trade Restrictions/Suspension/Debarment, 6) Foreign Contracting, 7) DBE Commitment, and 8) Former Public Officer – will be complied with in full. These Certifications are material representations of fact upon which reliance will be placed if the proposed contract is awarded. Failure to comply with these Certifications is a fraudulent act. The Contracting Agency is hereby authorized to request any entity identified in this proposal to furnish information deemed necessary to verify the reputation and capabilities of the Contractor and Subcontractors. This proposal is valid for at least ninety days.

Signature: _____
Name: _____
Title.....: _____
Date: _____
Telephone (voice): _____
(fax): _____
Email Address: _____

CERTIFICATION FOR ALASKA BUSINESS LICENSES AND REGISTRATIONS

PART

D

Contractor and all Subcontractors shall comply with the following applicable requirements of Alaska Statutes:

1. **Alaska Business License** (Form 08-070 issued under AS 43.70) at the time contract is awarded as required by AS 36.30.210(e) for Contractor and all Subcontractors. In accordance with Administrative Manual, Section 81.120, proof of application for an Alaska Business license will satisfy this requirement. Per AAM 81.120, acceptable evidence that the offeror possesses a valid Alaska business license consists of any one of the following:
 - a. Copy of the Alaska business license.
 - b. A canceled check that demonstrates payment for the Alaska business license fee.
 - c. A copy of the Alaska business license application with a receipt stamp from the State's business license office.
 - d. A sworn notarized affidavit that the bidder/offeror applied and paid for the Alaska business license.
 - e. Other forms of evidence acceptable to the Department of Law.
2. **Certificate of Registration** for each individual to be in "responsible charge" (AS 08.48.341(11-14)) for Architecture, Engineering, Land Surveying, or Landscape Architecture (Form 08-2407 issued under AS 08.48.211) issued prior to submittal of proposal. Associates, consultants, or specialists under the supervision of a registered individual in "responsible charge" are exempt from registration requirements (AS 08.48.331).
3. **Certificate of Authorization for Corporations, Limited Liability Companies, and Limited Liability Partnerships** for Contractors and Subcontractors for Architecture, Engineering, Land Surveying, or Landscape Architecture (Form 08-2407 issued under AS 08.48.241). Entities offering to provide Architectural, Engineering or Land Surveying services do not need to be registered for such disciplines at the time proposal is submitted provided they obtain registration prior to contract award (AS 08.48.241).
4. **Certificate of Incorporation** (Alaska firms) or **Certificate of Authorization for Foreign Firm** ("Out-of-State" firms). All corporations, regardless of type of services provided, must have one of the certificates (AS 10.06.218 and other sections of Title 10.06 - Alaska Corporations Code).
5. **Current Board of Director's Resolution** for incorporated Contractors and incorporated Subcontractors for Architecture, Engineering, Land Surveying or Landscape Architecture (reference AS 08.48.241) that names the person(s) designated in "responsible charge" for each discipline. Such persons shall be licensed in Alaska and shall participate as project staff in the Contract/Subcontracts.
6. **All partners** in a Partnership to provide Architectural, Engineering, Land Surveying, or Landscape Architecture **must be legally registered in Alaska** prior to submittal of proposal for at least one of those disciplines (AS 08.48.251) which the Partnership offers.
7. **Joint Ventures**, regardless of type of services provided, must be licensed/registered in the legal name of the Joint Venture as used in this proposal (AS 43.70.020 and 43.70.110(4)).
8. **Contracts for Architecture, Engineering, Land Surveying, or Landscape Architecture** may not be awarded to individuals, corporations or partnerships not in compliance, respectively, with the provisions of paragraph 2, 3, and 6, above (AS 36.90.100).

For information about licensing, Offerors may contact the Alaska Department of Commerce, Community, and Economic Development, Division of Corporations, Business and Professional Licensing at P.O. Box 110806, Juneau, AK 99811-0806, or at Telephone (907) 465-2550, or at Internet address: <https://www.commerce.alaska.gov/web/cbpl>

CERTIFICATION FOR INSURANCE

Contractor will ensure that it and all Subcontractors have insurance coverage to effectuate the requirements of DOT&PF Form 25A269, Indemnification and Insurance.

CERTIFICATION FOR FEDERAL-AID CONTRACTS EXCEEDING \$100,000

The individual signing this proposal certifies to the best of his or her knowledge and belief, that:

- (1) No federal appropriated funds have been paid, by or on behalf of the Contractor, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Contractor shall complete and submit Standard Form-LLL, Disclosure of Lobbying Activities, in accordance with its instructions. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

This certification is a material representation of fact upon which reliance will be placed if the proposed contract is awarded. Submission of this certification is a prerequisite for making or entering into the proposed contract imposed by Section 1352, Title 31, U.S. Code. The Contractor also agrees by submitting this proposal that Contractor shall require that the language of this certification be included in all lower tier subcontracts which exceed \$100,000 and that all such Subcontractors shall certify and disclose accordingly.

CERTIFICATION – COST AND PRICING DATA

In accordance with AS 36.30.400, any cost and pricing data submitted herewith, or in any future price proposals for the proposed contract, will be accurate, complete and current as of the date submitted and will continue to be accurate and complete during the performance of the contract, if awarded.

The Contractor certifies that all costs submitted in a current or future price proposal are allowable in accordance with the cost principles of the Federal Acquisition Regulations of Title 48, Code of Federal Regulations (CFR), Part 31 and that the price proposal does not include any costs which are expressly unallowable under the cost principles of the FAR of 48 CFR 31. In addition, all known material transactions or events that have occurred affecting the firm's ownership, organization and indirect costs rates have been disclosed.

CERTIFICATION – TRADE RESTRICTIONS AND SUSPENSION AND DEBARMENT

The individual signing this proposal certifies to the best of his or her knowledge that the Contractor and any subcontractors are in compliance with DOT&PF 25A262 Appendix A, General Conditions, Article A25 and Article A26.

CERTIFICATION - FOREIGN CONTRACTING

By signature on this solicitation, the offeror certifies that all services provided under this contract by the contractor and all subcontractors shall be performed in the United States. If the offeror cannot certify that all work is being performed in the United States, the offeror must contact the Contracts Officer to request a waiver at least 10 days prior to proposal deadline. The offeror must provide with their submission a detailed description of the portion of work being performed outside the United States, where, by whom, and the reason the waiver is necessary. Failure to comply with this requirement may cause the state to reject the bid or proposal as non-responsive, or cancel the contract.

CERTIFICATION – DBE COMMITMENT

For federal-aid projects with DBE goals: if the Contractor submits a utilization report that proposes to use certified DBE's in the performance of work, the Contractor certifies that every effort will be made to meet or exceed the proposed percentage.

In addition, the Contractor certifies that a Consultant Registration form shall be submitted to the DBE/Civil Rights Office for their firm and each subconsultant prior to award.

CERTIFICATION – FORMER PUBLIC OFFICER

Any proposer listing as a member of the proposer's team a current public officer or a former public officer who has left state service within the past two years must submit a sworn statement from that individual that the Alaska Executive Branch Ethics Act does not prohibit his or her participation in this project. If a proposer fails to submit a required statement, the proposal may be deemed nonresponsive or nonresponsible, and rejected, depending upon the materiality of the individual's proposed position.

The Ethics Act bars a public officer who leaves State service from representing, advising or assisting a person for compensation regarding a matter –

that was under consideration by the administrative unit in which the officer served, and in which the officer participated personally and substantially through the exercise of official action,

for two years after leaving state service. See AS 39.52.180(a). "Public officer" includes a state employee, a member of a state board and commission, and a trustee of the Exxon Valdez Oil Spill Trust. "Official action" means a recommendation, decision, approval, disapproval, vote, or other similar action or inaction. Possible remedies for violating the bar include penalties against the former public officer and voiding the state grant, contract or lease in which the former public officer is involved.

Additionally, former public officers may not disclose or use information acquired in the course of their official duties that could in any way result in a benefit to the former public officers or their families, if the information has not been disseminated to the public or is confidential by law, without appropriate authorization. See AS 39.52.140.

Each current or former public officer is responsible for determining whether he or she may serve in the listed capacity on this project without violating the Ethics Act. A form that a former public officer may use to certify their eligibility is attached. Current public officers may seek advice from their designated ethics supervisors concerning the scope and application of the Ethics Act. Former public officers may, in writing, request advice from the Office of the Attorney General, Ethics Attorney concerning the application of the Ethics Act to their participation in this project. It is the responsibility of the individual and the proposer to seek resolution in a timely manner of any question concerning the individual's eligibility.

PRE-AUDIT STATEMENT

(Confidential when completed)

Submit this form, completed and with required attachments, **only** if specifically requested, and **only** to the following address: DOT&PF, Attn: Office of Internal Review, PO Box 196900, Anchorage, AK 99519-6900 OR to fax number: (907) 269-0733. Confidentiality may not be ensured if delivered otherwise.

Evaluation of this statement may preclude the necessity for a comprehensive on-site audit of Contractor's records. Entries may be handwritten, if legible.

1. Identify your financial year including beginning and ending dates.....:
2. List your actual costs, by the following categories, for your most recently ended fiscal year. Cost Terminology is defined on the reverse.
 - 2a. Direct Labor..... \$
 - 2b. Attach a Trial Balance with grouping of accounts used to arrive at the following Indirect Cost amounts:
Fringe Benefits\$
General & Administrative Expenses.....\$

Sum..... \$
 - 2c. Indirect Cost Rate (Sum of 2b / 2a)..... Percent (%):
3. If your records have been audited within the last two years by a government agency, attach a copy of the Audit Report.
4. Attach copies of your most recent Internal and Audited (if performed by other than the Contracting Agency) Financial Statements.
5. Are your accounting methods for recording contract costs based on a job or project identified cost system?
[] Yes [] No If your response is "No", attach an explanation of your project cost accounting system.
6. If you charge projects based on unit rates (e.g.: for computer time, laboratory tests, copies or equipment use, etc.) attach a list of such items and unit rates.
7. Do you offset revenue received from unit rate payments against the applicable Indirect Cost Accounts?
[] Yes [] No

If you have questions concerning this document, please telephone our Auditors at (907) 269-0715.

CERTIFICATION

I certify that I am a duly authorized representative of the Contractor and that information and materials enclosed within this statement accurately represent financial records of the office listed below.

Signature: _____
Name: _____
Title: _____
Contractor: _____

Date: _____
Telephone: _____
Fax: _____
Email: _____

Office Address for which this Submittal is made:

Address where Accounting Records are maintained,
if not at Office Address:

Street:
P.O. Box:
City, State, Zip:

:
:
:

COST TERMINOLOGY

DIRECT LABOR - Base salary or wages paid to employees charged directly to contracts or projects.

OTHER DIRECT COSTS - Actual costs of other than Direct Labor. Some examples of Other Direct Costs are subcontracts, equipment (company owned or rented), unit rate items and reimbursable expenses (travel, computer charges, reproduction, etc.).

INDIRECT COST RATE – A computed rate developed by adding all of a firm's general and administrative costs, and all other indirect costs, then dividing by a base value, usually direct labor dollars to get a percentage. This rate is normally compiled based on the consultant's applicable fiscal year.

INDIRECT COSTS - Indirect costs consist of allowable expenses which, because of their incurrence for common or joint cost objectives, must be prorated (allocated) to jobs or contracts using a specified Indirect Cost Rate. A cost objective is a function, organizational subdivision, contract, project or work unit for which cost data is accumulated under the Contractor's accounting system. Generally, Indirect Costs are segregated into the following categories: Fringe Benefits and General & Administrative Expenses .

Fringe Benefits - Costs for items such as:

Vacation Time and Authorized Leave
Social Security and Unemployment Taxes
Group Medical Plan and Life Insurance Premiums

Workers' Compensation Insurance
Deferred Compensation/Retirement Plans

Overhead costs for items such as the following, if they are not included in Direct Costs:

Indirect Labor (Supervisory, Administrative, etc.)
Travel, Food and Lodging
Maintenance and Depreciation of Equipment/Computers
Business Insurance Premiums Not Billed to Clients
Rent, Heat, Power, Light and Janitorial Services

Office Supplies
Communications
Reproduction Costs
Recruiting Expense
Rentals of Equipment/Computers

UN-ALLOWABLE COSTS - Costs for the following items and certain other costs defined in 48 CFR Part 31 and related regulations are not allowable. Such costs shall not be included as Indirect Costs or in the calculation of the Indirect Cost Rate.

Alcoholic Beverages
Advertising
Interest and Other Financial Costs
Contributions and Donations
Federal Income Taxes
Goodwill

Organization Costs
Lobbying Costs
Bad Debts
Fines and Penalties
Entertainment
Keyman Insurance

NOTE: IF YOUR ACCOUNTING SYSTEM WHOLLY OR PARTIALLY ALLOCATES INDIRECT COSTS ON OTHER THAN A DIRECT LABOR BASIS, ATTACH A DESCRIPTION OF THE COST POOLS OR SERVICE CENTERS YOU USE AND IDENTIFY THE INDIRECT COSTS RATE(S) AND BASE(S).

INDEMNIFICATION AND INSURANCE

Appendix D in Professional Services Agreements

IRIS Program No: CFHWY00564
Federal Project No: 001665
Date Prepared: 11/21/2019

CONTRACTOR shall include the provisions of this form in all subcontracts that exceed \$25,000 and shall ensure Subcontractor's compliance with such provisions.

ARTICLE D1 INDEMNIFICATION

D1.1 The CONTRACTOR shall indemnify, hold harmless, and defend the CONTRACTING AGENCY from and against any claim of, or liability for negligent acts, errors or omissions of the CONTRACTOR under this Agreement. The CONTRACTOR shall not be required to indemnify the CONTRACTING AGENCY for a claim of, or liability for, the independent negligence of the CONTRACTING AGENCY. If there is a claim of, or liability for, the joint negligent error or omission of the CONTRACTOR and the independent negligence of the CONTRACTING AGENCY, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. "CONTRACTOR" and "CONTRACTING AGENCY", as used within this article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term "Independent Negligence" is negligence other than in the CONTRACTING AGENCY's selection, administration, monitoring, or controlling of the CONTRACTOR and in approving or accepting the CONTRACTOR's Work.

D1.2 The CONTRACTOR shall exercise that degree of skill, care and judgment commensurate with the professional standards for the services of a similar nature. When such standards are in dispute, they shall be established by a panel of three qualified, impartial professionals objectively selected and appointed by the Appeals Officer.

D1.3 The CONTRACTOR shall correct, through re-performance at its expense, any services which are deficient or defective because of the CONTRACTOR's failure to perform said services in accordance with professional standards, provided the CONTRACTING AGENCY has notified the CONTRACTOR in writing within a reasonable time, not to exceed 60 days, of the discovery of any such deficiency during the performance of the services and within 12 months of the date of final payment under this Agreement.

ARTICLE D2 INSURANCE

D2.1 Without limiting the CONTRACTOR's indemnification, it is agreed that CONTRACTOR shall purchase at its own expense and maintain in force at all

times for the duration of this Agreement, plus one year following the date of final payment, the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the CONTRACTOR's policy contains higher limits, the CONTRACTING AGENCY shall be entitled to coverage to the extent of such higher limits. Certificates of insurance must be furnished to the CONTRACTING AGENCY and incorporated into this Agreement with copies attached to this document. Certificates must provide for the CONTRACTING AGENCY to receive notice of any policy cancellation or reduction per AS 21.36 Sections 210-310. Failure to furnish certificates of insurance or lapse of the policy is a material breach and grounds for termination of the CONTRACTOR's services and may preclude other Agreements between the CONTRACTOR and the CONTRACTING AGENCY.

D2.1.1 Worker's Compensation Insurance: The CONTRACTOR shall provide and maintain, for all employees engaged in work under this Agreement, coverage as required by AS 23.30.045, and; where applicable, any other statutory obligations including but not limited to Federal USL&H and Jones Act requirements. The policy(s) must waive subrogation against the State of Alaska.

D2.1.2 Commercial General Liability Insurance: Such policy shall have **minimum** coverage limits of \$300,000 combined single limit per occurrence, covering all business premises and operations used by the Contractor in the performance of services under this agreement. The policy shall be written on an "occurrence" form and shall not be written as a "claims-made" form unless specifically reviewed and agreed to by the CONTRACTING AGENCY.

D2.1.3 Comprehensive Automobile Liability Insurance: Such policy shall have **minimum** coverage of \$300,000 combined single limit per occurrence covering all vehicles used by the Contractor in the performance of services under this agreement.

D2.1.4 Professional Liability (E&O) Insurance: Covering all negligent errors or omissions, and negligent acts, which the CONTRACTOR, Subcontractor or anyone directly or indirectly employed by them, make in the performance of this Agreement which result in financial loss to the State of Alaska. Limits required are per the following schedule:

MINIMUM LIMITS OF E&O INSURANCE

Contract Amount	Combined Single Limit, Per Occurrence & Annual Aggregate
Under \$25,000	As Available
\$25,000 to \$100,000	\$300,000
\$100,000 to \$499,999	\$500,000
\$500,000 to \$999,000	\$1,000,000
\$1,000,000 and over	Negotiable

D2.1.5 Professional Liability Insurance required for this Agreement is

\$1,000,000 Minimum

ARTICLE D3**MODIFICATION OF INSURANCE REQUIREMENTS**

(Article D3 is completed only when some of the standard insurance coverages are not applicable.)

CONTRACTOR RELATED MODIFICATIONS

- D3.1 ☐ **Workers Compensation Insurance** is not required because the CONTRACTOR is an Independent Contractor, Sole Proprietor or Self-Employed Person having no employees in any sense of AS 23.30.045.
- D3.2 ☐ **Comprehensive or Commercial General Liability Insurance** is not required because the general public and clients do not have any business access to a place of business or home office maintained by the CONTRACTOR.
- D3.3 ☐ **Comprehensive Automobile Liability Insurance** is not required because only public transportation, or a rented passenger vehicle with business use insurance, will be used to accomplish requirements of this Agreement.

PROJECT RELATED MODIFICATIONS FOR E&O COVERAGE

When services may apply to fire, life safety or structural aspects and/or wherever the services should safeguard life, limb, health or property, Professional Liability Insurance shall be required.

(E&O Coverage may be waived only if it was specifically not required within the solicitation for proposals.)

- D3.4 ☐ **Professional Liability (E&O) Insurance** is not required because: 1) the CONTRACTING AGENCY's use of the services or Work products obtained from the CONTRACTOR will not result in significant exposure to any third party claims for loss or damage; and 2), the CONTRACTOR services will not apply to any construction, alteration, demolition, repair or direct use of any highway, airport, harbor, building or other structure.
- D3.5 ☐ **Professional Liability (E&O) Insurance** is not required because this Agreement is for one of the following applicable (*checked*) services for which E&O coverage is not needed:
- ☐ Right-of-Way Fee Appraisals
 - ☐ Photogrammetric Mapping Services
 - ☐ Architectural/Engineering review of Construction Bid Documents wherein design responsibility clearly remains with the designer of record.

OTHER BASIS FOR MODIFICATIONS

(Requires written concurrence from Division of Risk Management)

- D3.6 ☐ Attached Exhibit D-1 identifies and provides justification for insurance modifications.

Above *checked* modifications of the insurance requirements specified in Article D2 are hereby approved:

CONTRACTING OFFICER

Signature: _____ Date: _____
 Name: _____
 Title: _____

PROPOSED STATEMENT OF SERVICES APPENDIX B

RFP No: 25202043
IRIS Program No: CFHWY00564
Federal Project No: 001665
Date Prepared: 11/21/2019

HSIP: CR Guardrail Inventory and Upgrade Design Services

ARTICLE B1 INDEX OF ARTICLES

<u>Article</u>	<u>Groups</u>	<u>Task #</u>		<u>Subject</u>
B2				Exhibits
B3				Codes, Regulations, Standards and Procedures
B4				Administrative Requirements
B5				Management
B6				Project Location and Description
B7				Summary of Contract Services
B8		1	EXC	Reconnaissance Engineering Study
B9	A	2		Environmental Activities
B10		3	EXC	Reserved
B11	B	4		Surveying
B12		5	NIC	Right of Way Mapping
B13		6	NIC	Geotechnical Investigation/Recommendations
B14		7	NIC	Hydrologic and Hydraulic Design
B15		8	NIC	Electrical Design
B16	A	9		Field Investigation and Data Collection
B17		10	EXC	Structural Design
B18		11	EXC	Foundation Design
B19	C	12		Design Study Report
B20	A	13		Public Involvement
B21		14	EXC	Reserved
B22	C	15		Erosion and Sediment Control Plan
B23	C	16		Plans, Specifications and Engineer's Estimate
B24		17	EXC	Reserved
B25		18	NIC	Utility Agreements
B26		19	EXC	Right of Way Appraisal And Acquisition Services
B27	D	20		Assistance During Bidding
B28	D	21		Assistance with Design Project Closeout
B29	E	22		Assistance During Construction

Do no work and incur no expense on any task until you have received a Notice to Proceed from the Contracting Agency that includes that task.

The Contracting Agency gives no guarantee that Notice to Proceed will be given for any task.

NIC is abbreviation for Not in Contract. The Contracting Agency reserves the right to add (NIC) tasks by amendment. However, it is under no obligation to do so, and reserves the right to complete the services by any other means, including the use of in house forces.

EXC is abbreviation for Excluded from Contract. No task marked EXC will be included in the Contract.

ARTICLE B2 **EXHIBITS**

<u>Exhibits</u>	<u>Subject</u>
B-1	Project Location Map & Route List
B-2	Project Schedule
B-3	Highway Design Standards and Guidelines
B-4	Informational Websites
B-5	General Requirements for Surveying and Mapping Services
B-6	Sample Monthly Progress Report
B-7	Public Notice Language
B-8	Central Region Guardrail Deficiency Procedure
B-9	Central Region DOT&PF Guardrail End Treatment Replacement Requirements
B-10	Draft Guardrail Field Inspection Rating Guide
B-11	Sample Guardrail Field Inspection Inventory Form

ARTICLE B3 **CODES, REGULATIONS, STANDARDS AND PROCEDURES**

B3.1 All studies, reports and design services shall be performed in accordance with applicable codes, regulations and standards; professional practice procedures; commonly recognized construction methods; and the DOT&PF's policies, procedures and practices, including those shown in **Exhibits B-3, B-4, and B-5**. The Contractor shall consider the geographical location of the project as well as other environmental and site specific constraints when performing services for this project.

B3.2 Publications that contain the current highway design standards and guidelines are listed in **Exhibit B-3**. During the period of this agreement the listed documents may be added to, deleted or revised.

B3.3 English units of measurement shall be used throughout development of the project.

ARTICLE B4 **ADMINISTRATIVE REQUIREMENTS**

B4.1 General. The Contractor shall provide services as identified and authorized by sequentially numbered Notices-to-Proceed.

B4.2 Project Staff. All services must be performed by or under the direct supervision of the following individuals (replacement of, or addition to, the Project Staff named below shall be accomplished only by prior written approval from the Contracting Agency:

<u>Name</u>	<u>Project Responsibilities</u>
	Contract Management
	Project Management
	Civil Engineering
	Public Involvement Services
	Environmental Analysis
	Surveying

B4.3 Professional Registration. All reports, plans, specification, estimates and similar work products provided by the Contractor shall be prepared by or under the supervision of an Engineer or Land Surveyor currently registered in Alaska.

B4.4 Billing Reports. The Contractor shall provide a two-page (typical) report with each monthly billing for months in which services are performed. Billings will be submitted no later than the 15th of each month. Any delayed costs from previous billing periods that are included in the current billing must be clearly explained in the report.

B4.5 Correspondence. All correspondence prepared by the Contractor shall bear the Contracting Agency's assigned Project name and numbers (State & Federal).

B4.6 Documents and Reports shall be printed with solid black letters that are double spaced on white, 8.5 inch x 11 inch bond or "Xerox Copy" paper. Other size paper may be used for illustrations if they are folded to 8.5 inch x 11 inch size. Original documents and reports shall be printed on one side of the paper only and shall be ready for copying. Original, camera ready, copies of final documents and reports shall be submitted to the Contracting Agency for a check before printing. All final documents and reports shall also be submitted as document files for Microsoft Word 2010 or compatible software. Written for IBM compatible computers.

B.4.6.1 Copies. When the Contract calls for multiple copies of documents or reports, the copies shall be printed on both sides of the paper. However, the cover and pages with approved illustrations, multicolored graphics, or photographs shall be printed on one side of the page only. All copies - except for originals - shall be comb bound.

B4.6.2 Page Numbers. All documents shall be page numbered to allow every major Section, Chapter, Appendix, etc., to begin on a "right hand," odd numbered page.

B4.6.3 Covers. The cover of all documents and reports shall include the following information:

- a. Name of document or report.
- b. Date.
- c. Indicate whether draft or final.
- d. Project Name.
- e. Federal / State Project Numbers:
- f. Prepared for: Alaska Department of Transportation and Public Facilities.
- g. Prepared by:
- h. Map and/or picture of project area.

B4.7 Contractor Name on Plan Sheets and Documents. No Contractor logos shall be allowed on any electronic or hard copy document produced for the Contracting Agency. The Contractor company name shall be included in the box above or below the engineer's seal on each plan sheet. Documents produced for the Contracting Agency shall include the Contractor's company name at the bottom right of the first page, cover sheet or title sheet only. Contractor letterhead shall be allowed only as exhibits in document appendices. The Contractor name shall be in the same font as other lettering on the plan sheet or document, shall be 1/16" or less in height on 11"x17" plan sheets, and shall be in the following format:

PLANS DEVELOPED BY:
COMPANY NAME
COMPANY ADDRESS

B4.8 Drafting All drawings shall be submitted as AutoCAD current edition drawing files and plot files. Unless otherwise stated, the format and standards for all drawings shall be according to the most current Department of Transportation & Public Facilities (DOT&PF) Central Region English (as a guide) Highway Design Drafting Manual as of the Notice to Proceed for this contract. A standard layering scheme provided by the Contracting Agency shall be used. Failure to adhere to this scheme shall be cause for rejection. The drafting procedures shall be as outlined in the current Contracting Agency's Highway Design Drafting Manual. See **Exhibit B-3**.

B4.9 Specifications shall be submitted with solid black letters that are single spaced on white, 8.5 inch x 11 inch bond or "Xerox Copy" paper. They shall be printed on one side of the paper only and shall be ready for copying. Specifications and estimates shall contain no graphics and no photographs except as specifically approved by the Contracting Agency. All Specifications shall be developed using Microsoft Word 2010 or compatible software.

B4.10 Not Used.

B4.11 Quantity Calculations. Quantity calculation information shall contain sufficient information to allow the quantity for each item to be checked by starting at the source document. Reference the source document(s) for each pay item. These Documents shall be referenced to the applicable pay item. Submit in loose leaf, 3-ring binders. If more than one binder is necessary, number them and include a table of contents in the first

binder. Label all binders with the State and Federal project numbers and an indication of the contents, both on the spine and on the front cover. Provide dividers to clearly mark the location of specific items within each binder.

B4.12 Proofreading. The Contractor shall prepare the report(s), which to the greatest extent possible, free of mathematical, grammar, spelling and typographical errors. The Contractor is responsible for professional proofreading of the report(s) to meet the intent of this requirement.

B4.12.1 Quality Assurance Memo. Provide with each submittal a Quality Assurance memo signed by the person in responsible charge for the project and the Contractor's Project Manager, certifying that they have performed a quality control check on the items included in the submittal. A memo template will be provided by the Contracting Agency upon request.

B4.13 Revisions. The Contractor shall modify work products in response to direction from the Contracting Agency. Corrections, adjustments, or modifications necessitated by the review/approval process, but which do not substantially affect the scope, complexity, or character of the services, shall be considered a normal part of the Contractor's services.

B4.13.1 Errors and Omissions. Except as described in this Statement of Services, work products shall be essentially complete when submitted to the Contracting Agency. Work products having significant errors or omissions will not be accepted until such problems are corrected.

B4.13.2 Review Meetings. Following each review, the Contracting Agency will provide written comments and may hold a meeting to discuss the issues. The Contractor's personnel who are in-responsible-charge for the work products under review shall attend the meeting and they may be asked to interpret and provide explanations of the content.

B4.13.3 Comment Resolution. The Contractor shall provide a written response with subsequent submittals that address all written and oral comments from the Contracting Agency. All changes from previous submittals shall be clearly explained.

B4.14 Reproduction and Distribution. When the contract requires only the original or only one copy of a work product to be delivered, the Contracting Agency will reproduce and distribute any other copies required. Items delivered for reproduction shall be organized and camera ready for copying and not stapled or otherwise bound.

B4.15 Completion Documentation. The original of all documents prepared by the Contractor during project development shall be submitted with the Final PS&E assembly. These documents include all notes, sketches, maps, photographs, survey data, computations (cost computations shall be under separate cover), cross sections, and other materials created to develop, record, or justify services provided for the project. These documents shall identify all assumptions made. The Contractor shall keep a copy of all the development documents until construction is complete.

B4.15.1 Documents created to determine pay item quantities shall contain sufficient information to allow the quantity for each pay item to be checked by starting from the source document. These Documents shall be referenced to the applicable pay item.

B4.15.1 Documents shall be submitted in loose leaf three ring binders. The binders shall be labeled on the spine with the project name, "Completion Documents", and the binder number. The front of the binders shall also be labeled with this information as well as the State and Federal project numbers and a brief description of what documents are contained in the binder. The binders shall have dividers that sort the contents by pay item number, report, or other logical category. The binders shall be numbered and the first binder shall include a table of contents.

ARTICLE B5 MANAGEMENT

Note: *This Article shall not be treated as a distinct task. Costs associated with the services described in this Article shall be apportioned among the tasks required to accomplish the requirements of Articles B8 through B29*

B5.1 Performance Schedule. A Project Schedule is attached as **Exhibit B-2**. The Contractor agrees to expend all effort necessary to stay on schedule and meet the contract delivery dates. If the Contractor becomes aware of any reason why the project schedule may be delayed, such reason shall be identified in writing to the Contract Manager within two working days of discovery.

Provide and maintain a critical path method progress schedule for the project. Use this schedule for coordinating and monitoring all work of the Contract.

B5.1.1 Meetings / Reports. The Contractor shall schedule and attend periodic briefing meetings (generally every other week) with the Contract Manager. Various members of the Contractor's support staff and subcontractor staff shall also attend, if necessary. The Contractor shall be responsible for providing timely information required for the project related services performed by the functional groups within the Contracting Agency. The Contractor shall provide "exception reporting" of scheduled activities that are late, suspended, or significantly accelerated. The Contractor shall explain why any activity is off schedule, or likely to become so. The Contractor shall also explain what corrective action(s) are being taken. The Contractor shall keep minutes of all meetings and submit them to the Contract Manager within five workdays following each meeting.

B5.2 Project Coordination. All coordination and correspondence for the project shall be handled through or with the concurrence of the Contract Manager.

B5.2.1 FHWA Communication. All communications with FHWA regarding this project shall be by the Contracting Agency.

B5.2.2 Contracting Agency Activities. Except as specified otherwise, the Contract Manager will coordinate the Contractor's activities with those of various functional groups within the Agency. These groups may include Materials/Geotechnical; Planning; Traffic, Safety & Utilities; Preliminary Design & Environmental; Right-of-Way; Bridge; Specifications and Cost Estimating; and Contracts. The Contractor shall be responsible for providing timely information required for the project related services performed by the functional groups within the Contracting Agency.

B5.2.3 Agency and Public Coordination. The Contractor shall not commit the Contracting Agency to any action to be accomplished by the proposed project.

B5.2.4 Correspondence. The Contractor shall submit all written material, letters, survey forms, etc., used to communicate information regarding the project to the Contract Manager for review and acceptance prior to its distribution. Copies of all outgoing and incoming correspondence shall be provided to the Contract Manager at least once a week. All outgoing correspondence shall include the project title and state and federal project numbers.

B5.2.5 Release of Information. The release of any project-related information must be approved by the Contract Manager.

B5.2.6 Right-of-Entry Permits. The Contracting Agency will obtain Right-of-Entry authorizations for the Contractor, when required. The Contractor shall provide a minimum of 10 working days advance notice for the Agency to acquire any authorization. Should the authorizations take additional time to obtain, performance schedule(s) may be adjusted accordingly. The Contractor shall not be entitled to any additional compensation for any delay incurred in obtaining Right-of-Entry Permits.

ARTICLE B6 PROJECT LOCATION AND DESCRIPTION

B6.1 Location. The project location is comprised of various high speed routes throughout Central Region. See **Exhibit B-1** for routes to be evaluated.

B6.2 Description. This project will prepare an inventory by evaluating existing guardrail segments, end terminals, and associated hardware along several routes in Central Region for damage and adherence to current AKDOT&PF and FHWA standards. Use results of inventory shall be used to design and construct installation or updates to guardrail segments found to be in non-conformance with State and Federal standards.

The project it is a Highway Safety Improvement Program (HSIP) project and scope is limited to address the specific safety need identified in the HSIP nomination. It is a strong value in these projects to limit the design effort to only what is necessary in order to achieve the HSIP goal of these projects.

ARTICLE B7

SUMMARY OF CONTRACT SERVICES

B7.1 General The Contractor shall provide services for a HSIP safety improvements project. The Contractor shall provide two sets of deliverables; 1.) Field Investigation and Data Collection, and 2.) A bid-ready set of Plans, Specifications, and Estimate that contain all information required to construct the project improvements. When authorized by an NTP, provide the following services:

- Field Investigation and Data Collection
- Environmental Activities
- Surveying
- Design Study Report
- Public Involvement
- Erosion and Sediment Control Plan
- Plans, Specifications and Engineer's Estimate
- Assistance During Bidding
- Assistance with Design Project Closeout
- Assistance During Construction

B7.2 DOT&PF Tasks. The Contracting Agency anticipates that DOT&PF staff will complete the following tasks; however, it reserves the right to add the following tasks by contract amendment, as may be required:

- Right of Way Mapping (if required)
- Electrical Design (if required)
- Geotechnical Investigation/Recommendations (if required)
- Utility Agreements Preparation (if required)
- Hydrologic and Hydraulic Design (if required)

B7.3 Work Not Required. The Contracting Agency anticipates that the following work will not be required for this project:

- Reconnaissance Study
- Structural Design
- Foundation Design
- Right of Way Appraisal And Acquisition Services

ARTICLE B8

RECONNAISSANCE ENGINEERING STUDY

Task 1

(EXC)

ARTICLE B9
ENVIRONMENTAL ACTIVITIES
Task 2

B9.1 Engineering Support. Provide engineering support as needed for the preparation of environmental documents and permit applications for the project.

B9.2 Categorical Exclusion. Provide a Categorical Exclusion for the project in accordance with the National Environmental Policy Act (NEPA), the DOT&PF Environmental Procedures Manual, and DOT&PF practices.

B9.3 Not Used

B9.4 Not Used

B9.5 Reevaluations. Re-evaluations of the NEPA Environmental Document will be required at the following project milestones:

- Request for Authority to Proceed with Right-of-Way Acquisition (if required)
- Request for Authority to Proceed with Final PS&E
- Request for Authority to Proceed with Utility Relocation
- Request for Authority to Proceed with Construction
- Change in project scope and/or termini

The Reevaluation Memorandum must include an evaluation of all changes in the following, since the approval of the original document or the latest reevaluation of it.

- project scope
- affected environment
- impacts
- mitigation proposed

B9.6 Historic and Cultural Resources. Research documents and files of the Alaska Heritage Resources Survey. Document the results of this task in a Historic and Cultural Resources Memo. Additional SHPO or Section 106 consultation may be negotiated as an additional service.

B9.7 Eagle Nest Survey. Make one (1) site visit to document the location of eagle nests in the project vicinity. Document the results of this task in an Eagle Nest Survey Memo that includes a map showing the approximate location of each nest.

B9.8 Not Used.

B9.9 Wetlands.

B9.9.1 Delineation. Conduct wetland delineations in accordance with the U.S. Army Corps of Engineers (COE) 1987 Wetlands Delineation Manual and 2007 Regional Supplement to the COE Wetland Delineation Manual, Alaska Region, by personnel who has been formally trained in this method.

B9.9.2 Functional Assessments. Prepare functional assessments of wetlands in accordance with established protocols and professional judgment.

B9.9.3 Impact Analysis. For all impacted wetlands, address the importance of the wetlands and the severity of the impacts, including the acreage of wetlands involved in the study area. In evaluating the importance of the wetlands, consider the primary functions of the wetlands, the relative importance of these functions to the total wetlands resource in the vicinity, and any other pertinent factors, such as uniqueness, that may contribute to the importance of the wetlands. Include in the analysis a map identifying wetlands types and subtypes in the project vicinity. Wetlands information may include submitting data in a GIS format with accompanying metadata. Lead staff may either have a M.S. in Biology, Botany or related field, as well as training from the COE in the 1987 Wetlands Delineation Manual and 2007 Regional Supplement to the COE Wetland Delineation Manual, Alaska Region, or 5 years field experience delineating wetlands and conducting functional assessments in Alaska.

B9.9.4 Mitigation. Assist the Contracting Agency in identifying and evaluating wetland impact mitigation strategies.

B9.10 Permitting Support. Provide engineering and technical support to assist the Contracting Agency in completing all permit applications pertaining to this project. Prepare permit application drawings for submittal and perform calculations as required for each permit. Prepare an attachment for each permit application detailing the project enhancements that have been incorporated into the proposed action.

B9.11 Environmental Review of Plans. After the permits have been acquired by the Contracting Agency, review the design drawings to ensure they are consistent with the permit requirements, and provide a consistency review summary memo.

B9.12 Deliverable Items:

<u>Type of Document</u>	<u>Para</u>	<u>Copies</u>	<u>Originals</u>	<u>PDF</u>
Initial Environmental Document				
Draft	B9.2		1	1
Final	B9.2	1	1	1
Environmental Document Reevaluation				
First Reevaluation	B9.5		1	1
Second Reevaluation	B9.5		1	1
Historical and Cultural Resources Memo	B9.6		1	1
Eagle Nest Survey Memo	B9.7		1	1
Wetland Delineation	B9.9.1		1	1
Wetland Functional Assessment	B9.9.2		1	1
Wetland Impacts Analysis	B9.9.3		1	1
Permit Application Drawings	B9.10	1	1	1
Consistency Review Summary Memo	B9.11	1	1	1
Re-Evaluation #1				
Re-Evaluation #2				
Re-Evaluation #3				
Re-Evaluation #4				

ARTICLE B10

RESERVED

Task 3

(NIC)

ARTICLE B11

SURVEYING

Task 4

B11.1 OVERVIEW

B11.1 General

B11.1.1 Comply with the requirements stated in **Exhibit B-5**.

B11.1.2 Research all information applicable to the requirements of the project.

B11.1.3 Perform all field and office services necessary to collect geospatial data and to reduce the collected data to a form useful for the Contracting Agency.

B11.2 Additional Provided Items

The following Items will be made available to the selected contractor:

- The Contracting Agency anticipates that survey data may be available for many of the areas identified for guardrail replacement, and the Contractor shall consult with the Contracting Agency to determine if survey data is available. Should survey data not be available, the Contractor shall perform such services as approved by the Contracting Agency (see para 16.2).

B11.3 Survey Limits and Scope.

Survey limits will be developed after the Field Investigation and Data Collection task is complete. Once review of this information is completed and improvement work recommendations are approved by the Contracting Agency areas of survey need shall be identified by the Contractor and agreed upon by the Contracting Agency. Every effort shall be made to limit survey needs and the contractor shall make length of need determinations without survey wherever practical.

Survey all elements necessary to provide for the installation of new guardrail as determined by condition assessments and approved by the Contracting Agency. Features and limits will vary based on site conditions, at a minimum survey efforts shall be sufficient to provide for construction layout and conflict identification with other roadway and roadside features.

B11.4 Design Survey Deliverables

Survey for Design	EB5.15.7
ROW lines for Construction plans	EB5.17.2

ARTICLE B12 **RIGHT OF WAY MAPPING**

Task 5
(NIC)

ARTICLE B13 **GEOTECHNICAL INVESTIGATIONS/RECOMMENDATIONS**

Task 6
(NIC)

ARTICLE B14 **HYDROLOGIC AND HYDRAULIC DESIGN**

Task 7
(NIC)

ARTICLE B15 **ELECTRICAL DESIGN**

Task 8
(NIC)

ARTICLE B16 **FIELD INVESTIGATION AND DATA COLLECTION**

Task 9

B16.1 General. The Contractor will drive all specified routes included in Exhibit B-1 to assess the condition of existing guardrail segments on the high speed (50MPH) portions of these routes. This task shall follow the Central Region Guardrail Deficiency Procedure outlined in **Exhibit B-8**.

B16.2 Guardrail Analysis Report. The Contractor shall provide a Guardrail Analysis Report (GAR), which shall be included as an appendix to the DSR. The GAR shall consist of two (2) parts.

Part 1 shall consist of a list of all existing guardrail segments (organized by roadway and milepoint, LT/RT) and whether each guardrail segment requires replacement or repair by one or more of the following criteria:

- A. The existing guardrail end treatment requires replacement under the Central Region DOT&PF Guardrail End Treatment Replacement Requirements (see **Exhibit B-9**).
- B. All or part of a guardrail segment has a grade of "F" according to the Draft Guardrail Field Inspection Rating Guide (see **Exhibit B-10**).
- C. Assess guardrail for compliance with current Federal Highways Administration (FHWA), and DOT&PF standards and specifications. This is expected to include some or all of the following and as included in the guides listed in A & B above:
 - Check guardrail system for compliance with crashworthiness standards
 - Check hardware for tightness and proper size
 - Check offset blocks for proper position
 - Check for fixed objects within the deflection area
 - Check shoulder width behind the post to ensure proper support of the posts
 - Check guardrail location relative to any curb
 - Where appropriate, check for proper transitioning
 - Check timber posts for damage or rot
 - Check steel posts for rust, being bent or badly deflected
 - Identify other obvious defects of guardrail and end treatments
 - Identify end terminals not meeting manufacturer's installation guidelines
 - Identify areas needing to be surveyed to provide information necessary to determine new guardrail installation layouts that will conform to current FHWA and DOT&PF standards.

Part 2 of the GAR shall consist of a length of need analysis of all guardrail segments requiring replacement. The length of need analysis shall be based on the design speed of the road.

Topographic survey work for guardrail replacement will only proceed when authorized by an amendment by the Contracting Agency.

The Contractor shall include all guardrail segments identified for replacement in the PS&E.

B16.3 Data Collection. The Contractor shall use an organized method of inventorying and collecting data so as to promote efficiency and uniformity of assessments. A guardrail inventory app was developed by DOT&PF Northern Region for a similar HSIP project and could be used for the proposed inventory work. A Sample Guardrail Field Inspection Inventory Form is included in **Exhibit B-11**.

B16.4 Reviews and Schedule. A draft of Part 1 of the GAR consisting of the collected data shall be provided to the Contracting Agency for review. It shall include sites evaluated and provide recommendations with justification for locations in which guardrail is identified by the Contractor as needing replacement due to assessed condition as well as report on segments in acceptable condition. The GAR shall identify locations and instances needing survey to provide sufficient design layout and engineering for length of need (LON) or other considerations such that the Contractor can complete the PS&E task. This report shall be signed by the supervising registered Civil Engineer and appended to the Design Study Report (DSR). Following review of the GAR by the Contracting Agency, the Contractor shall address any comments to the satisfaction of the Contracting Agency prior to making the final submittal.

The final GAR (Part 1 & 2) shall be submitted to the Contracting Agency with the DSR for final review, and as a final deliverable.

B16.5 Approval. The Contractor shall address Contracting Agency comments and make corrections until the Agency approves the GAR. Upon securing approval, the Contractor shall make any final corrections and submit originals of the report to the Contracting Agency for its records until the final GAR is submitted with the DSR. The Contracting Agency's acceptance of the GAR completes this task.

B16.6 Deliverable Items.

<u>Type of Document</u>	<u>Para</u>	<u>Copies</u>	<u>Originals</u>	<u>PFD</u>
Guardrail Analysis Report				
Draft Part 1	B16.2	1	0	1
Draft Part 1 & 2 (with DSR submittal)	B16.2	1	0	1
Final	B16.2	1	1	1

ARTICLE B17 **STRUCTURAL DESIGN** **Task 10** **(EXC)**

ARTICLE B18 **FOUNDATION DESIGN** **Task 11** **(EXC)**

ARTICLE B19 **DESIGN STUDY REPORT** **Task 12**

B19.1 General. Provide a Design Study Report (DSR) that meets the requirements of the Preventive Maintenance section of the Highway Preconstruction Manual. Use the 1R DSR Template provided by the Contracting Agency, and modify as appropriate to include the safety features pertinent to this HSIP scope of work.

B19.2 Not Used.

B19.3 Not Used.

B19.4 Draft DSR. The draft DSR must document the background and purpose of the project, and the approach to be taken with the design. Unless directed by the Contract Manager to do so, do not hold up the submittal waiting for appendices to be available.

B19.5 Final DSR. Submit the Final DSR, sealed and signed by the supervising registered Engineer. The Contracting Agency will route the Final DSR for Final Approval. Additions and revisions may be required at later date.

B19.6 DSR Appendices

B19.6.1 Approved design **Exceptions and/or Waivers**

B19.6.2 ITS Systems Engineering Analysis, if applicable, provided by the Contractor under this Task

B19.6.3 Approved **Environmental Document**, provided by the Contractor, approved by the Contracting Agency

B19.6.4 Geotechnical Report, provided by the Contracting Agency if required

B19.6.5 Geotechnical Recommendations, provided by Contracting Agency, if required

B19.6.6 Reserved

B19.6.7 Design Decisions. See Article B28.

B19.6.7.1 Guardrail Analysis Report. See Article B16.

B19.6.8 Draft Railroad Crossing Checklist. See Article B23.

B19.6.8.1 Information must be **gathered on site** for the checklist.

B19.6.8.2 The Contracting Agency will provide the railroad crossing checklist **template and instructions** on request.

B19.6.9 Final Railroad Crossing Checklist. See Article B23.

B19.6.10 Reserved

B19.7 Deliverable Items.

<u>Type of Document</u>	<u>Paragraph</u>	<u>Hard Copies</u>	<u>pdf</u>	<u>'Word'</u>	<u>or</u>
<u>'Excel'</u>					
<u>Video</u>					
Design Study Report					
Draft	B19.4	1	1	1	
Final	B19.5	1	1		
Design Exceptions/Waivers	B19.6.1		1		
ITS Systems Engineering Analysis	B19.6.2		1		1
Guardrail Analysis Report	B19.6.7	1	1		
RR Crossing Checklist(s)					
Draft	B19.6.8		2		

ARTICLE B20
PUBLIC INVOLVEMENT
Task 13

B20.1 General. For the purpose of this Agreement, Public Involvement is defined as the total effort, both informal and formal, made by the Contractor and the Contracting Agency to keep the public and agencies informed about the project, to ensure that all reasonable alternatives are identified, and that public and agency concerns are considered and addressed.

B20.2 Public Involvement Activities. The Contractor shall perform support, as required, for informal public involvement through final design of the project. This support may include providing written and/or oral responses (through the Contracting Agency) to requests for information about the project from individuals and/or agencies.

B20.2.1 Advertisements and Notifications. The Contractor shall, as required, prepare and have published newspaper and online advertisements for notices of availability of documents for review, and for other events as required by the State and Federal process. The Contractor shall deliver for review and approval drafts of all notices, advertisements and agendas before distribution or publication. The Contractor shall provide the Contracting Agency an affidavit of publication of any newspaper advertisement.

B20.2.2 Civil Rights Requirements. The Contractor shall provide the Contracting Agency's Project Manager and/or Contracting Agency's Environmental Analyst, for the subject project, with documentation of compliance with Title VI of the Civil Rights Act of 1964 immediately following each project-related public meeting, hearing, presentation, or community involvement activity.

B20.2.2.1 Ensure that **meaningful services** to limited English proficiency persons are provided, as described in the DOT&PF's Limited English Proficiency Plan (see **Exhibit B-3** and **Exhibit B-7**).

B20.2.2.2 Display Title VI documents at the meetings, including a Civil Rights brochure, an ADA & Title VI Policies brochure, and a "How to File a Complaint" brochure. See **Exhibit B-4** for the website location of the documents.

B20.3 Design Public Meeting. No Design Open House Public Meetings are anticipated for this project. Information on the project will be provided at the annual Anchorage Transportation Fair(s) by the Contracting Agency.

B20.4 Community Council Meetings. Present the project at up to four (4) local Community Council meetings.

B20.4.1 Presentation Materials. Provide written and visual materials for presentation of the project at these meetings. The materials must be approved by the Contracting Agency in advance of the meetings. Provide a written summary of all the informational materials made available for public display / presentation at the meetings.

B20.4.2 Meeting Documentation. Compile the results of all public meetings, to include a summary of oral and written testimony, an analysis of comments received, and any recommendations, in a letter to the Project Manager.

B20.5 Public Involvement Report. The Contractor shall prepare a report documenting public involvement through completion of the design phase. The report will include a copy of pertinent comments from the public and any responses. Deliver it as part of the Design Project Closeout (see Task 21).

B20.6 Other Public Involvement. Provide additional support, as required, for informal public involvement through final design of the project. This support may include providing written and/or oral responses (through the Contracting Agency) to requests for information about the project from individuals and/or agencies.

B20.7 Deliverable Items.

<u>Type of Document</u>	<u>Paragraph</u>	<u>Hard Copies</u>	<u>'pdf' Copies</u>
Meeting Presentation Materials	B20.4.1	1	1
Meeting Documentation	B20.4.2	1	1
Public Involvement Report	B20.5	1	1

ARTICLE B21

RESERVED

**Task 14
(EXC)**

ARTICLE B22

EROSION AND SEDIMENT CONTROL PLAN

Task 15

B22.1 General Provide an Erosion and Sediment Control Plan (ESCP) in accordance with the Contracting Agency's ESCP Template and associated instructions. All temporary erosion and sediment controls are shown in this template as a separate set of plans instead of in the PS&E.

B22.2 Deliverable Items.

<u>Type of Document</u>	<u>Paragraph</u>	<u>Hard Copies</u>	<u>'pdf' Copies</u>	<u>.dwg file</u>
ESCP				
Draft	B22.1	1	1	1
Final	B22.1	1	1	1

B22.3 Provided Items The Contracting Agency will provide the following:

1. Erosion and Sediment Control Plan Template

A sample Erosion and Sediment Control Plan is available from the Contracting Agency by request.

ARTICLE B23
PLANS, SPECIFICATIONS AND ENGINEER'S ESTIMATE
Task 16

B23.1 General. Provide construction contract documents and other deliverables as described herein. The project design must be a best accommodation of the geographic location and the site specific constraints, as well as the project values and other constraints as defined by the Contracting Agency.

B23.2 Reserved.

B23.3 Support Data. Throughout the design phase, provide data in support of the Contracting Agency activities related to the project design. This includes but is not limited to the following.

B23.3.1 Topography Survey Needs Provide a Survey Request form and figure(s) showing where further topographic survey is required in order to design the project or to determine any necessary or recommended property rights acquisitions or alterations to existing utilities. After the initial list is provided, update it as necessary as the design progresses.

B23.3.2 Right of Way Survey Needs Provide a Survey Request form and figure(s) showing locations and areas where survey confirmation of location of the Right of Way is necessary in order to determine the need for additional property rights acquisition.

B23.3.3 Data and Figures required by Contracting Agency Support Groups, for example for environmental permitting or Right of Way negotiations.

B23.3.4 CAD Files with required disclaimers, for use by utility companies or others, as approved by the Contract Manager.

B23.3.5 Cross-sections. Include the following in each cross-section: original ground, the roadway template, right of way limits, grid lines, labels for offsets and elevations, and the roadway station for which it is applicable. Plot the cross sections at a standard scale and with no vertical exaggeration. Include on each sheet the project name, project number, date and review submittal. Submit the half size cross sections on 11" by 17" sheets.

B23.4 Plan Sheets.

B23.4.1 Not Used.

B23.4.2 Utility Plan Sheets, if needed, will be provided by others. Incorporate Utility Plans into the Plan set.

B23.4.3 Develop Right of Way Lines, will be provided by the Contracting Agency, using the best available information.

B23.5 Specifications. The Contracting Agency will provide a current copy of the Standard Modifications, Statewide Special Provisions and Regional Special Provisions to the Standard Specifications for Highway Construction. Combine the Standard Modifications and Special Provisions for the PS&E assemblies. Use the format described in **Exhibit B4**.

Incorporate Project specifications for Bridge, Utility, and/or other work into the Project Specifications.

Continually update the Specifications per updates to the Statewide Special Provisions and Regional Special Provisions.

Prepare any project specific special provisions. Whenever possible, use Performance Specifications rather than Method Specifications.

Notify the Contract Manager if you discover any potential need for sole source or proprietary items. Do not specify any proprietary items unless at least two are named. If "or equivalent" is used, specify the criteria for judging the equivalence. Do not specify sole source materials unless a sole source procurement authorization is obtained.

B23.5.1 Appendices to the Specifications. Provide the following as appendices to the Specifications.

- a. Materials Certification List
- b. Sign Shop Drawings

B23.6 Engineer's Estimate (EE). Develop the EE using the AASHTOWare program. Use standard pay items unless there is a specific reason to use special ones. The Contracting Agency will provide pay item numbers for items not listed in the Standard Specifications if needed. Provide estimated unit prices and total estimated costs for all items.

The Contracting Agency will make its historical records available for the determination of unit prices using the DOT&PF BidTab IV program. Sign and date the EE.

The Engineer's Estimate must remain confidential until after construction bids are opened.

B23.7 Submittal Packages and Reviews. The Contract Manager may review the submittal package and require changes, corrections and/or clarifications, and a re-submittal.

B23.7.1 Not Used

B23.7.2 Plans-In-Hand Submittal Package must consist of plans 75% complete, a specifications memo, a brief basic construction schedule, a full set of cross-sections (if available), and an engineer's estimate. Indicate clearly on the plans any locations where additional property rights may be required, and any potential requirements for adjustments or relocations of utility facilities.

B23.7.2.1 Initial Comment Responses. The Contracting Agency will provide written comments on the Plans-In-Hand submittal. Provide written responses to as many of the comments as practicable but at least one day before the review meeting. Indicate which comments require further information or coordination.

B23.7.2.3 A Plans-In-Hand Review Meeting will be held a few weeks after the submittal is received. The Contractor's Project Manager, Project Engineer, and staff who are in-responsible-charge of relevant design disciplines must attend.

B23.7.3 PS&E Review Submittal Package must consist of complete plans, specifications, Special Notice to Bidders, a basic construction schedule, a full set of cross-sections (if available), the engineer's estimate, and the following:

- a. A brief report of significant changes made to the assembly after the Plans-In-Hand Review Meeting (if applicable).
- b. A written list of comments made by the Plans-In-Hand reviewers, with adjudicated responses.
- c. Draft Erosion and Sediment Control Plans, including sheets.
- d. Draft traffic control documents as required by the HPCM
- e. A technical memo describing all non-standard features on the project, and the reason(s) for them. (If applicable)

B23.7.3.1 Initial Comment Responses. The Contracting Agency will provide written comments on the PS&E submittal. Provide written responses to as many of the comments as practicable before the review meeting. Indicate which comments require further information or coordination.

B23.7.3.2 Reserved.

B23.7.3.3 A PS&E Review Meeting will be held a few weeks after the submittal is received. The Contractor's Project Manager, Project Engineer, and staff who are in-responsible-charge of relevant design disciplines must attend.

B23.7.4 Certification Set Submittal Package must consist of the following:

- a. Plans essentially complete. The Contract Manager may direct that some minor work/revisions need not be included in this set.
- b. Specifications essentially complete. The Contract Manager may direct that some minor work/revisions need not be included in this set.

- c. Engineer's Estimate essentially complete.
- d. Final responses to all comments made on the design.
- e. Final Railroad Crossing Certification for each railroad crossing within the project limits.

B23.7.4.1 Revise the certification set deliverables per Contract Manager direction.

B23.7.5 Advertisement Set Submittal Package must consist of the items listed below.

- a. Complete, signed and sealed Plans
- b. Complete Specifications including Appendices
- c. Signed Engineer's Estimate
- d. Special Notice to Bidders
- e. Full set of cross-sections (if available)
- f. Completed Highway Design Checklist
- g. Completed Traffic Control documents
- h. A brief report of significant changes made to the assembly after the PS&E Review meeting, but which were not discussed at that meeting. (If applicable)
- i. Final responses to all comments made on the design (if updates are required after the Certification Set submittal).
- j. Final Erosion and Sediment Control Plans, including sheets
- k. Letter describing any unusual design features, and the reasons for them. (If applicable)
- l. Quantity Calculations in accordance with the B4.11 and Highway Design Checklist
- m. Completed FHWA or State Funded Projects Division 100/645 & Contracts Checklist

B23.7.5.1 Revise the advertisement set deliverables per Contract Manager direction.

B23.8 Deliverables

<u>Type of Document</u>	<u>Para</u>	<u>Hard Copies</u>	<u>.PDF</u>	<u>AutoCAD</u>	<u>Word</u>
Topography Survey Needs List/Figure(s)	B23.3.1	1	1		
ROW Survey Needs List/Figure	B23.3.2	1	1		
Data and Figure(s) for Support Groups	B23.3.3	1	1		
CAD Files for Support Groups	B23.3.4			1	
Cross-Sections	B23.3.5	1	1		
Plans-In-Hand Submittal Package	B23.7.2	2	1		
Plans-In-Hand Initial Comment Responses	B23.7.2.1	20	1		
PS&E Review Submittal Package	B23.7.3	2			
PS&E Review Initial Comment Responses	B23.7.3.1	20	1		
Certification Set Submittal Package	B23.7.4	4	1		
Advertisement Set Submittal Package	B23.7.5	2	1		

ARTICLE B24

Reserved

Task 17

(EXC)

ARTICLE B25

UTILITY AGREEMENTS

Task 18

(NIC)

ARTICLE B26

RIGHT OF WAY APPRAISAL AND ACQUISITION SERVICES

Task 19

(EXC)

ARTICLE B27
ASSISTANCE DURING BIDDING
Task 20

Assist the Contracting Agency as requested during project bidding. Personnel who were in responsible charge for engineering, and other personnel as necessary and appropriate, must be available to interpret and clarify documents prepared during project development and to assist the Contracting Agency with preparing any necessary addenda to the bid documents. Do not communicate about this project with any potential bidders.

<u>Type of Document</u>	<u>Hard Copies</u>	<u>.PDF</u>
Addenda (as required)	1	1

ARTICLE B28
ASSISTANCE WITH DESIGN PROJECT CLOSEOUT
Task 21

B28.1 Reserved.

B28.2 As-Awarded CAD files. Within 4 weeks after the bids are opened for the construction contract, provide all CAD files for the project, in accordance with the Central Region Highway Design Project Closeout Guide.

B28.3 Completion Documentation. Submit the original of all documents prepared by the Contractor during project development. These documents include all notes, sketches, maps, photographs, survey data, computations, cross sections, meeting and site visit notes, and other materials created to develop, record, or justify services provided for the project. Identify all assumptions made in the documentation. Keep a copy of all the development documents until construction is complete.

B28.3.1 Documents created to determine pay item quantities must contain sufficient information to allow the quantity for each pay item to be checked by starting from the source document. Reference these documents to the applicable pay item.

B28.3.2 Provide electronic copies of **photographs** on disks or other media approved by the Contracting Agency.

B28.4 Submit a WORD document of the **as awarded project specifications**.

B28.5 Provide a **Public Involvement Report**, describing and documenting all public involvement activities employed on the project.

B28.6 Provide **DSR Amendments Information** as required. These may include, but are not limited to:

- a. Copies of, and indexes of, project correspondence.
- b. The Public Involvement Report, as defined in Article B20
- c. Memos or letters documenting design decisions
- d. Other updates or changes as necessary

B28.7 Deliverables

<u>Type of Document</u>	<u>Para</u>	<u>Hard Copies</u>	<u>Electronic</u>
As Awarded CAD files	B28.2	1	1
General Project Files	B28.3	1	1
Electronic Copies of Photographs	B28.3.2	1	1
As Awarded Specifications	B28.4.3	1	1
Public Involvement Report	B28.5	1	1
DSR Amendment Information	B28.6	1	1

ARTICLE B29
ASSISTANCE DURING CONSTRUCTION
Task 22

B29.1 Provide **assistance** to the Contracting Agency as requested during project construction. Personnel who were in responsible charge for engineering, and other personnel as necessary and appropriate, must be available to interpret and clarify documents prepared during project development and bidding; to review and approve shop drawings, electrical materials/catalog cuts submittals, retaining wall forming plans, trench stability designs, and landscaping materials and procedures; and to assist the Contracting Agency with preparing any necessary change order documents.

B29.2 All **communication** about this project must be through the Contracting Agency. Do not communicate directly with the successful bidder.

B29.3 Documents. Within a month after the Contracting Agency accepts the constructed project, submit to the Contracting Agency the original of all documents prepared or modified when performing the services for this task.

EXHIBIT B-1
PROJECT LOCATION MAP & ROUTE LIST

Project Route List									
Route Name	CDS Route	HSIP Nom. Miles	MP Begin	MP End	Route Calc'd Miles	Route ID	Notes		
1 Big Lake Road	170073	3.31	0.00	3.31	3.31	2321010X000			
2 Bogard Road	170700	10.65	3.88	10.70	6.82	2381095X000	Near Peck St to Trunk Rd, other segment is not state rd		
3 Bridge Access Road	117790	3.04	0.99	3.29	2.30	2141069X000			
4 C Street	134341	3.29	4.35	7.68	3.33	2281321X000			
5 Fairview Loop Road	170028	10.94	0.00	10.94	10.94	2381026X000	Project 56020 will impact some existing rail, coordinate		
6 Glenn Highway	135000	63.55	41.75	118.00	67.25	1060000I000	Skip 66-67 (Kings River project), 84-92 (Long Lake project)		
7 Holt Lamplight Rd	116400		0.00	8.35	8.35	2181049X000			
8 Hope Road	132000	15.16	0.00	15.16	15.16	2221006X000			
9 International Airport Road	133800	1.73	0.18	1.69	1.51	2281235X000			
10 Kalifornsky Beach Road	115400	18.42	0.00	18.42	18.42	2141074X000			
11 Kenai Spur Highway	117600	24.13	Various, see Notes		29.09	2141077X000	2.47-7.67, 12.78-25.39, 27.20-38.48		
12 Knik Goose Bay Road	170044	18.50	8.00	20.00	12.00	2381037X000			
13 Knik River Rd	136035		0.00	11.32	11.32	2361000X000			
14 Miller Loop Road	116100	5.40	0.00	5.40	5.40	2181004X000			
15 Nash Road	130500	2.31	0.00	2.40	2.40	2121017X000			
16 Old Glenn Hwy	136000	8.07	9.40	17.47	8.07	2361053X000			
17 O'Malley Road	133500	3.40	0.43	3.83	3.40	2281016X000			
18 Palmer-Fishhook Road	137000	8.66	0.00	8.66	8.66	2381089X000			
19 Palmer-Wasilla Highway	136800	8.23	0.93	9.16	8.23	2381092X000	Project 51829 will be altering north side GR, construction 2020		
20 Parks Highway	170000	215.85	Various, see Notes		120.06	1140000I000	0-4.41, 9.55-21.53, 22.71-33.24, 34.79-127.93		
21 Portage Glacier Road	132300	5.18	0.00	5.18	5.18	1021005X000			
22 East Seldon Extension / Bogard Extension	170088	2.12	3.83	6.00	2.17	2381073X000	Wasilla Fishhook to Bogard		
23 Seward Highway	130000	109.83	8.00	114.00	91.00	1020000X000	Skip MP 19.95-22.55, Skip MP 75-90, skip MP 98.9-104.5		
24 Sterling Highway	110000	98.74	Various, see Notes		91.10	1000000X000	0-7, 14.15-43.76, 46.45-56.25, 78.9-95.29, 98.35-116.0, 117.18-127.83		
25 Talkeetna Spur Road	171000	12.32	0.00	12.32	12.32	2421008X000			
26 Trunk Road	170200	5.63	0.45	6.08	5.63	2361071X000			
27 Willow Fishhook Road	137700		0.00	31.48	31.48	2401007X000			

Red Text = Routes not included in HSIP that are high speed, Approved to be added to project by HSIP Coordinator

EXHIBIT B-2
PROJECT SCHEDULE

<u>Milestones</u>	<u>Date</u>	<u>Deliverables</u>
Project Start.....	March 2020	Notice to Proceed
Guardrail Analysis Report	September 2020	Report
Plans-In-Hand Review	May 2021	Draft Plans, Specifications, and Estimate
PS&E Review	September 2021	Draft Plans, Specifications, and Estimate
ATA.....	April 2022	Final Plans, Specifications, and Estimate

EXHIBIT B-3
HIGHWAY DESIGN STANDARDS AND GUIDELINES

Office of the Federal Register (United States)

- Code of Federal Regulations, Title 23, Highways, Current Edition

AASHTO

- LRFD Bridge Design Specifications, Current Edition with Interim Revisions
- A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011
- Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT \leq 400), 2001
- Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 6th Edition, 2013
- Roadside Design Guide, 4th Edition, 2011
- Guide for the Development of Bicycle Facilities, 4th Edition, 2012
- Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition, 2004
- Roadway Lighting Design Guide, 2005
- A Guide for Achieving Flexibility in Highway Design, 1st Edition, 2004

ASPLS

- Standards of Practice for Professional Land Surveyors, Current Edition

DEC

- Alaska Storm Water Guide, 2011

DOT&PF

- Highway Preconstruction Manual, Current Edition
- Standard Specifications for Highway Construction, Current Edition
- Standard Modifications (Supplementary Specifications to the Standard Specifications for Highway Construction), Current Edition
- Standard Special Provisions (Statewide and Regional) to the Standard Specifications for Highway Construction, Current Edition
- Central Region Specifications Provisions – Style Guide, Current Edition
- Standard Drawings, Current Edition
- Central Region Standard Drawings, Current Edition
- Alaska Test Methods, Current Edition
- Environmental Procedures Manual, Current Edition
- Alaska Bridges and Structures Manual, Current Edition
- Alaska Highway Drainage Manual, 2006

Alaska Flexible Pavement Design Manual, Current Edition

- Alaska Geotechnical Procedures Manual, Current Edition
- Alaska Traffic Manual, consisting of
 - o Manual on Uniform Traffic Control Devices, FHWA, 2009 with Current Revisions
 - o Alaska Traffic Manual Supplement, 2016
- Construction Surveying Requirements, Current Edition
- Right-of-Way Manual, Current Edition
- Central Region CAD Standards & Drafting Guide, Current Edition
- Alaska Sign Design Specifications, Current Edition
- Central Region Project Closeout Guide, Current Edition
- All Policies and Procedures

EXHIBIT B-4 INFORMATIONAL WEBSITES

(Provided for information only)

As-built Search: http://dot.alaska.gov/edocs_code/searches/asbuiltsearch.cfm

Right of Way Search: http://www.dot.state.ak.us/edocs_code/rowmap/rowmaps.cfm

Survey:

http://www.dot.state.ak.us/creg/dot-cadastral/Construction_Surveys/Centerline_Referencing_and_Perpetuation_2011.doc

Functional Classification Maps: <http://www.dot.state.ak.us/stwdplng/fclass/fclassmaps.shtml>

Preconstruction Manuals: <http://www.dot.state.ak.us/stwddes/dcspubs/index.shtml>

Materials Resources : http://www.dot.state.ak.us/stwddes/desmaterials/mat_resource.shtml

Policies and Procedures: http://www.dot.state.ak.us/admsvc/pnp/policy_and_procedures.shtml

FTP Site: <http://www.dot.state.ak.us/creg/design/highways/>

Items located on this site include:

- Central Region CAD Standard & Drafting Guide (CSDG)
- CAD Templates and Example sheets (*.dwt, A1, A2, B1, C1, D1, etc.)
- Regional Drawings
- Master Materials Certification List (MMCL)
- ESCP Template
- Specification Templates and Guides
- Highway Design Checklist
- Design Study Report Templates
- Railroad Crossing Checklist
- Survey Request Form

EXHIBIT B-5
GENERAL CRITERIA FOR SURVEYING AND MAPPING SERVICES

EB5.1 Standards. The Contractor shall perform the services to standards called for in the Alaska State Professional Land Surveyors (ASPLS) Standards of Practice, the California Geodetic Control Committee (CGCC) Standards for Band IV surveys, U.S. COE Manual EM-1110-1-10000 for Photogrammetric Mapping, or the DOT&PF Construction Surveying Requirements, as appropriate to the services being performed.

All studies, reports and services shall be performed in accordance with applicable codes, regulations and standards; professional practice procedures; and commonly recognized surveying and mapping methods. The contractor shall package the deliverable in an electronic format using folders. The Contractor shall not begin surveying for design, surveying for right-of-way, or right-of-way mapping without specific written authorization from the Contracting Agency.

EB5.2 Considerations. The Contractor shall consider the geographical location of the project as well as other environmental and site specific constraints when performing services. The Contractor shall procure the necessary right of entry permissions when required, including private property, any Native Allotments, and Alaska Railroad property.

EB5.3 Registration. All survey services shall be conducted by, or under, the direct supervision of a Professional Land Surveyor (PLS) holding current registration in the State of Alaska. A PLS shall be an active, on-site field supervisor of the survey crew. A PLS shall also be directly involved in the preparation of all survey deliverables.

EB5.4 Field books. The Contractor shall furnish hardbound field books for recording survey information. The books shall become the property of the Contracting Agency after the survey information has been entered and the contract completed. Each book shall be labeled with the project name and an appropriate title, e.g. Horizontal Control, Vertical Control, etc., and shall have an index and comments page. The index page shall reference the contents by page number. A readable PDF copy of the field books is acceptable.

EB5.4.1 Field notes shall be kept in a neat and orderly fashion. All pages shall be consecutively numbered, showing date, weather, and crew names. All abbreviations used shall be described on the comments page. Sketches are to be used frequently and shall be detailed enough to assist in following the progression of the services. Notes and sketches shall be adequately detailed to convey their intent to a person who is not familiar with the project. Descriptions of all monuments or other points, recovered or set, are to include the data stamped on the monument and the condition of the monument.

EB5.5 Units. U.S. Customary System of Measurement (foot units) shall be used throughout development of the project. Any metric conversions required shall be based upon the U.S. Survey Foot (3937 feet = 1200 meters exact).

EB5.6 Drawings, Plats, and Maps shall be prepared in electronic format as specified by the Contracting Agency.

EB5.6.1 Unless otherwise stated, the format and standards for all drawings will be according to the most current DOT/PF Central Region Design Drafting Manual. These standards are available upon request. The plotted scale shall be as specified by the Contracting Agency.

EB5.6.2 Drawings shall be produced and provided in English (U.S. Survey foot units) format. Distances will be shown in horizontal ground foot units. Areas shall be annotated with "Ac." for acres, and "sq. ft." for square feet. Metric units shall not be shown on drawings developed for design work, unless requested to do so by the Contracting Agency.

EB5.6.3 All linework and lettering must be of professional quality and all line widths and lettering sizes must be of such size that all information can be clearly shown without overlap or confusion. All lettering must be a minimum size of 0.1 inch at a full-scale plot. Lettering and linework must be in the appropriate black drafting ink. AutoCAD style names and fonts shall follow the Contracting Agency's specified standards. See the current Design Drafting Manual (EB5.6.1)

EB5.6.4 Linework shall not run through text. Do not break lines at text; mask the linework using color 155 solids. Solids shall be placed on the same layer as the text that the solid lies under.

EB5.6.5 Drawings are to be accurate models of the data shown, e.g.; a line labeled N 10°00'00" E 104.35' shall be electronically drawn exactly as labeled, a line that is shown to terminate at a monument symbol shall be electronically drawn with no distance between the endpoint of the line and the center of the symbol, etc.

EB5.6.6 All CAD work within Model Space shall be color by layer. The drawing shall include metadata, to include: control statements, drawing notes, and any other survey related info shown as text within Model space. The drawing shall be purged

before submitting. Zoom to extents and remove any extraneous features. Check to ensure that all symbols are the same scale, which should be the plotted scale of the drawing. A standard DOT&PF north arrow, a legend depicting only the symbols and linework used on that sheet, a foot unit bar scale, and standard DOT&PF border will be included on each sheet within the drawing. Do not include any extraneous backup files.

EB5.6.7 Final Plans, Maps, and Plats shall be submitted electronically and with solid black ink on 22" x 34" original mylar. All final drawings shall be plotted so that the ink is on the front surface of the mylar. Topographic drawings are not required to be plotted.

EB5.6.8 Drawings not meeting these standards will be rejected. All drawing files shall be submitted electronically to the AK DOT&PF Survey Manager upon completion for review. The contractor shall perform their own internal review of these products before delivery, to see that Department standards have been followed.

EB5.7 **TINs** shall be an Autodesk Civil3D Surface or 3D lines with an accompanying LandXML file. Include the TIN boundary as a closed polyline at elevation zero, and the fault lines as 3D polylines. All TINs produced shall be checked by ground based survey methods and by field inspection of contours generated by the TIN.

EB5.7.1 A TIN certificate shall be submitted, signed, and sealed by the responsible PLS and shall contain the following: 1) the methods used to gather data for production of the TIN(s), 2) the accuracy of the TIN(s), and 3) the checks used to substantiate the accuracy of the TIN(s). All ground based TIN(s) shall be field checked before final submittal, and this shall be stated on the TIN certificate. All TIN(s) shall be checked by a PLS using withheld Topographic points randomly collected throughout the TIN(s) area. A minimum of 50 points shall be collected. Provide a spreadsheet showing the elevation differences from the TIN(s). A sample certification of TIN is available from the Contracting Agency's Survey Section.

EB5.8 **Coordinate Files** shall be comma-delimited ASCII text files. Data shall be in the sequence Point Number, N, E, Z, and Description. Coordinates shall be given to four decimals for the Northings and Eastings, and two decimals for elevations. Points of unknown elevation shall have a placeholder of -9999 in the Z position. Descriptors are to be case sensitive, e.g.: Rebar5 shall not equal REBAR5. Descriptors for found or set monuments shall follow examples provided by the Contracting Agency.

EB5.8.1 Point Numbering Scheme. The following point numbering scheme shall be used:

Range	Use
1-200	Primary Control Set (main project, line-of-sight traverses)
201-300	Primary GNSS Control
301-400	Aerial Control Panels or Naturals (HV's)
401-550	Secondary Control Points (Spikes/Nails)
551-600	Recovered Published Hz. Control (NGS, NOS, etc.)
601-700	Set or Recovered Vertical Control
701-2000	Fnd Mons/Prop Cors
2,001-5,000	Computed/Protracted Points, Search, Pre/Post Stakeout
5,001-20,000+	Topography Survey Points

The Surveyor shall ensure that point numbers used in this task do not conflict with point numbers used in other survey tasks on this project.

EB5.9 **Electronic Data** (drawing files, coordinate files, reports, etc.) shall be submitted on appropriate size and type of digital media.

EB5.10 Quality Control shall be performed by the Contractor prior to all submittals. Three dimensional backsight checks shall be recorded at the beginning and end of all instrument setups. Three dimensional coordinate checks shall be recorded at the beginning and end of an RTK GNSS work session. These checks shall become part of the submittal, labeled as "Quality Control Checks" within the Control Summary deliverable. The Contracting Agency will **reject** submittals that do not substantially conform to the requirements of this statement of services.

EB5.11 Reviews. Draft documents required under this agreement shall be submitted to the Contracting Agency Survey Manager for review. The Contractor shall allow three weeks for the return of written comments. The Contractor shall address and respond to these comments to the satisfaction of the Contracting Agency prior to submitting the final documents.

EB5.12 Submittal Delivery. Deliverables shall be submitted to the Contracting Agency in accordance with the negotiated schedule.

EB5.13 Survey Services shall be performed in the following sequence unless otherwise directed by the Contracting Agency:

- A. Research
- B. Pre-Work Meeting with ADOT&PF
- C. Control Survey
- D. Aerial Photography/Photogrammetry
- E. Topographic/Planimetric Survey
- F. Bridge Site(s)/Drainage Survey
- G. Special Features
- H. Right-of-Way Survey
- I. Right-of-Way Mapping
- J. Preconstruction Surveying
- K. Post Construction Surveying
- L. Right of Way Engineering Closeout Services

EB5.14 Control Surveys

EB5.14.1 General. Control surveys include establishing horizontal and vertical control points as directed by the Contracting Agency. The Contractor shall prepare a Survey Control Diagram (SCD) showing the results of the control survey. The SCD will be a recorded document, and as such, will need to meet certain criteria. All points used or tied as a part of these control surveys shall be included in the project coordinate file and shown on the SCD. SCD guidelines are available from the DOT&PF Survey Section. Prior to performing field surveys for the project, the Contractor shall meet with the Contracting Agency's Survey Manager, or their designee, to get existing Department control data and to discuss the control requirements for the project.

EB5-14.1.1 Basis of Horizontal Control. When the primary control is provided by the Contracting Agency, it shall be held as the basis of control for the project. Contact the Contracting Agency if the provided control is found to be disturbed or out of tolerance. Any auxiliary control points necessary to augment this control shall be incidental to the task for which it is required. When the primary control is to be performed by the Contractor, the basis of control shall be as directed by the Contracting Agency's Survey Section. The local project coordinate system to be used shall be based upon transformation parameters supplied by the Contracting Agency.

EB5-14.1.2 Horizontal Control Standards. All horizontal control survey measurements and references shall be recorded in field books. Electronic data collection can be used to record control data, but is not acceptable as the sole data source for survey measurements. Distances shall be measured and recorded in both feet (nearest 0.01 foot) and meters (nearest 0.001 meter) as a check. Recorded angle sets, at a minimum, will contain 2 direct and 2 reverse measurements of the forward angle right. When the difference between a direct and reverse pointing of an angle pair exceeds six seconds (ten seconds for distances of 150 feet or less), then that angle pair shall be rejected and remeasured. The mean angle right shall be used for all computations. All foresights and backsights shall be of the fixed leg type. Secondary control points may be side-tied in the same manner. Secondary control points shall be, at minimum, a mag-nail in paved areas or a 6-inch spike in unpaved areas.

All traverses performed shall meet or exceed the standards for Third Order Class I, Traverse Surveys as specified in the ASPLS Standards of Practice. All traverses shall be closed; beginning and ending at known points with an allowable linear error of closure of 1:10,000 or better. In no case shall ground traverses run greater than 2 miles between GNSS controlled points. Static GNSS work shall meet current CGCC Standards for Band IV Surveys. Traverse and GNSS network adjustments shall be by simultaneous least squares adjustment methods.

All cadastral, property, or right of way corners controlled with GNSS shall be done using Static GNSS survey methods. These corners are to be considered secondary control and need only to be occupied once, providing there is a minimum of two 20 minute duration vectors from project control computed for the corner position that differ by no more than 0.08 feet horizontally.

The use of Post-Processed Kinematic (PPK) or Real-Time-Kinematic (RTK) GNSS procedures are not allowed for establishing control.

EB5.14.1.3 Primary Horizontal Control. For Highway Projects or traverses along road corridors, GNSS control points shall be set at approximately 2 mile intervals within the project limits, in areas where they may be easily traversed in and out of. These points shall be used for both the project horizontal and vertical control. A 9/16" dia. stainless steel rod shall be used for these deep monuments. A minimum 4" dia. well case of length 2.5 feet shall be set around each monument with a protective cap and marker post. These points shall be driven to a maximum of 40 feet or refusal, whichever is less. An acceptable alternative would be to cement a cap into a solid rock outcropping or bedrock, or a dig-in type flared-base monument where conditions warrant.

Additional intervisible traverse points, as needed, shall be set at maximum 1320 foot intervals, and shall consist of a minimum 5/8" x 24" rebar (5/8" x 8" in pavement) with identifying cap. These points shall be located off of the existing paved surface wherever possible, and shall be set at least 0.1 foot below the existing ground surface. No spikes or nails shall be used as the Primary Horizontal Control.

All primary horizontal control points and reference points, found or set, shall be shown on the SCD.

The Contractor shall prepare a narrative horizontal control summary detailing the datum, primary control points used, Basis of Bearings, type of adjustment performed and statistics, problems encountered during the survey, equipment used, etc., which shall include annotated copies of control computations and control adjustments, and a horizontal control statement. For GNSS control surveys, the Contractor shall also provide a RINEX2 format data file of at least 8 hours of GNSS data for at least two control points for at least two different days in the Contractor's control network. **The Contracting Agency recommends logging as much data on as many different days as possible to account for any solar disturbances or other unanticipated problems that might occur.**

EB5.14.1.4 Basis of Vertical Control. When primary vertical control is provided by the Contracting Agency, it shall be held as the basis of control for the project. Any auxiliary control points necessary to augment this control shall be incidental to the task for which it is required. When the primary vertical is to be established by the Contractor, the vertical datum shall be determined by the Contracting Agency. Note: A tie to MLLW shall be made for all surveys in or adjoining tidally influenced areas unless specifically directed to do otherwise by the Contracting Agency.

EB5-14.1.5 Vertical Control Standards. All vertical control survey measurements shall be recorded in field books. If an electronic digital level is used and the data is recorded electronically the Contractor shall provide annotated copies of the raw and reduced data. All vertical survey circuits shall meet or exceed the standards for third order leveling as specified in the latest printing of the Federal Geodetic Control Committee's Standards and Specifications for Geodetic Control Networks. All vertical control points shall be part of a closed level loop; side-shots are not acceptable. Each loop shall be adjusted and this adjusted elevation used for any further loops. Loop closures and loop-adjusted elevations shall be shown in the field books. The books shall also be used to record descriptions and sketches of vertical control points found or set, condition of found points, and for electronically recorded data the loop information (start point, point(s) controlled, end point, etc.) necessary to interpret the data. Primary vertical control points (BM's and TBM's) shall be controlled by differential leveling. Elevations may be established for secondary control points by closed trigonometric loops, in which case sight distances shall not exceed 750 feet with foresights and backsights of approximately equal lengths, and the line of sight shall clear obstacles by a minimum of 1.5 feet to avoid the effects of adverse refraction. Elevation differences shall be measured and recorded to the nearest 0.01 foot.

EB5.14.1.6 Primary Vertical Control. For highway projects or projects along road corridors, primary vertical control points shall be established every ½ mile or less. Existing official bench marks (BM's) shall be used wherever possible, with intermediate temporary bench marks (TBM's) established between them. These TBM's shall be stable objects such as luminaire and signal pole base bolts, spikes in trees, etc. **Wooden utility poles, scribes in concrete, and traverse points shall not be used for TBM's.** Contact the Contracting Agency for direction if no suitable TBM locations exist. Where no permanent official bench marks exist, the Contractor shall establish a minimum of two **permanent bench marks** per project site, or one per mile, whichever is the greater number, for use through project construction. Permanent bench marks shall be at a minimum, 9/16" dia. stainless steel rod driven no more than 40 feet or until refusal into dry ground, encased by a 2.5 foot section of 4" dia. well casing flush with the ground with a rubber cap covering the top of the pipe, or a brass cap cemented into rock outcrops or stable concrete structures, e.g. bridge abutments or building foundations and

walls. These points may also satisfy the requirements for Horizontal control, under section EB5.14.1.3. A marker post shall be placed near each permanent benchmark, found or set. Refer to the NOAA Manual NOS NGS 1, Geodetic Bench Marks for recommended guidelines for setting permanent benchmarks.

Primary vertical control points, found or set, shall be described in great detail, identifying the particular physical feature used for the elevation point, and sketches shall be made to aid in this effort. Instructions sufficient to enable someone unfamiliar with the project to find these points shall be recorded; these instructions shall include distances and directions from recognizable terrain features such as major intersections, bridges, buildings, etc. All primary vertical control points, found or set, shall be tied to the project horizontal control and shown on the SCD.

The Contractor shall prepare and provide a narrative vertical control summary detailing the datum, primary control points used, vertical network adjustment data, problems encountered during the survey, equipment used, etc., which shall include an NGS benchmark data sheet if available.

EB5.14.2 Survey Control Diagram. The Contractor shall prepare a Survey Control Diagram (SCD) for the project showing the relationship between survey monuments set and found in the field. The SCD typically shows all horizontal and vertical control found or set in the course of a survey, as well as all found or set monuments that exist in the roadway. The SCD will be recorded as a Record of Survey in the appropriate Recording District by the Contracting Agency once approved. In cases where Right of Way Mapping will not take place as part of a project, the Contractor may be required to show all monument ties on the SCD, as directed by the Contracting Agency.

EB5.14.3 Survey Control Sheet. The Contractor shall prepare a Survey Control Sheet (SCS) for the project showing the relationship between the final project centerline and survey monuments in the field. This differs from a Survey Control Diagram (SCD-see section EB5.14.2) in that the SCD does not show the final project centerline. The SCS shall be part of the construction plan set and its principal users will likely be Land Surveyors staking the project centerline prior to and after construction or replacing corners that have been disturbed, Contracting Agency surveyors checking that work, and the Project Engineer to ensure that existing monumentation does not get disturbed. Other near-term users may include Land Surveyors who are performing boundary work in the vicinity of the project. The SCS may be recorded as a Record of Survey, but typically is not. **The SCS must not be prepared before the final design centerline is known**, typically after the Pre PS&E Review. Samples are available from the Contracting Agency's Survey Section.

EB5.14.4 Electronic Photographs. To assist in the point identification, verification of markings, condition of monument and accessories, we ask that .jpg digital photographs be gathered of all monuments found, set, or tied. Each corner should have a minimum of three photographs: one readable close-up of the cap, one near distance showing monument condition, and one with an overview of the monument and its surroundings (it helps to have a tripod setup over the point or some other indicator like fiberglass post to find monument in surrounding picture). All original bearing trees and other accessories of record should also be photographed for these corners. The photographs should be indexed by point number, with the point number in the file name to aid identification of the point. Many times a chalkboard or other similar device can be used in the field to identify the point in the photographs by writing the point legal designation and project point number on the board, and placing board in scene of the pictures. Resolution/File Size should be limited to no more than 1Mb per photo, or a resolution of no more than 2048x1356.

EB5.15 Survey for Design

EB5.15.1 General. Design Surveys include topographic, hydrographic, photogrammetric, and other geospatial methods of data collection associated with defining the existing ground surface and both natural and man-made features.

EB5.15.2 Monument Ties. The Contractor shall research, locate, photograph, and verify all monuments within the existing Right-of-Way limits and the proposed construction limits. If the Contracting Agency previously performed a field survey tying monumentation, the existence of these monuments shall be field verified. This will insure that the Contracting Agency can comply with the provisions of AS 19.10.260 and AS 34.65.040, and enable an estimate of quantities to be made. Examples would be Rectangular or Centerline monuments. In the event there is no Right of Way survey performed, these corners will need to be surveyed using the methodology described in section EB5.14.1.2, so their position can be accurately reestablished.

EB5.15.3 Remote Sensing. When directed by the Contracting Agency, the Contractor shall obtain remotely sensed and associated mapping products. The Contracting Agency shall be granted rights to use of the data and associated delivered products, for our project design and other in-house uses, including transmittal to others.

EB5.15.3.1 Photogrammetry. As an alternative to ground surveying, the Contractor may use controlled aerial photography to provide planimetric and topographic information. Use of photogrammetric data for this project is subject to

the Contracting Agency's approval. As aerial photography may be used for a variety of analyses, the photography shall be natural color and have sufficient scale and resolution to allow for the preparation of the photogrammetric products, which meet the required accuracies and provide economical acquisition. Aerial photography used for topographic mapping products shall be acquired during leaf-free and snow free conditions. Aerial photography used solely for orthophoto products may be acquired with leaf-on conditions. Existing photography may be substituted for new photography with the approval of the Contracting Agency Project Manager. All acquired aerial photography, and all photogrammetric products prepared by the Contractor, shall conform to the guidelines and standards of the US COE Manual EM-1110-1-1000. The Contractor using methods suitable to return the desired mapping accuracies shall control aerial photography used for mapping products. Horizontal and vertical datum for the photogrammetric products shall be on the same datums as that used for the project control. Any photo pre-mark panel points shall be set and controlled for this task, using the same methods and materials as detailed for auxiliary control points presented above for Horizontal and Vertical Control. The Contractor shall determine the number of, location of, and panel size for these points in conjunction with the firm performing the aerial photography. Each photogrammetric control point shall be marked using appropriate panel material. The Contractor shall remove and dispose of all panels set under this contract at the direction of the Contracting Agency. The use of the most cost effective techniques that will provide the specified products is encouraged. All photogrammetric products for development of TINs shall meet the format, content, accuracy and certification requirements of Section EB5.15.4.1 through EB5.15.4.6 unless directed otherwise by the Contracting Agency.

If aerial photography is acquired for, or available for use on this project, a digital orthophoto, geo-referenced to the project coordinates, shall be provided to the Contracting Agency for use in design. Orthophotos shall be delivered in two formats with the associated world files: uncompressed .TIF, and compressed Mr. Sid image file.

EB5.15.4 Topographic Survey. Topographic features shall be surveyed using appropriate data collection methods. The Contractor shall provide complete topographic mapping in a single AutoCAD drawing file along with a single TIN upon completion. All points located in these surveys shall be included in the project coordinate file. The Contractor shall:

EB5.15.4.1 Define the existing ground surface by creating a Triangular Irregular Network (TIN). The TIN shall be capable of accurately generating 1 foot contours in all areas. Hard shots (pavement, concrete, etc.) shall have vertical accuracy of less than 0.1 foot. The TIN shall incorporate fault lines (grade breaks, existing centerlines, edges of pavement, curbs [flowline and top back], sidewalks, shoulders and/or tops of bank, toes of slope/fill, ditches and/or drainages, etc.) and additional shots as necessary to insure that the TIN accurately represents the **existing ground surface**. The TIN shall not represent water surfaces. Sufficient data shall be gathered along driveways and side streets to allow grade matching. Provide TIN verification in the form of the Contracting Agency's TIN Certificate. (EB5.7)

EB5.15.4.2 Locate and map all existing improvements and utilities (above and below ground) within the survey limits. Mapping of overhead utility wires shall include the apparent low point of the wire sag. Overhead wire crossings shall also be located at the existing and proposed centerlines. Elevations for these points shall be the bottom wire elevation. Locate all attachments (guy wires, pedestals, stand pipes, load centers, lights, etc.) within the project survey limits. This includes, but is not limited to, power, telephone, fuel lines, water and sewer lines, cable television, edge of pavement, fences, signage, and navoids within the survey limits. Note any historical sites located in this area. Caution shall be used to avoid disturbing any historic remnants. Locate the edge of trees and identify the approximate average height of the trees at the ~~within the project area~~ ^{within the project area} ~~Tibany Corp~~ ^{Tibany Corp}.

Engineers flood plain datums. For Airports: Heights of towers, antennas and any other structure that could be considered a hazard to aircraft shall be included. Determine location, finish floor elevations, peak roof elevations and a description of all buildings in and within 100 feet of the surveyed area. Locate the first tier of structures lying outside of the proposed airport boundary and within 200 feet of that boundary.

EB5.15.4.3 Locate and map all drainage structures within the survey limits. Record diameter, length, invert elevations, structure type and condition, high water marks, and apparent flow direction.

EB5.15.4.4 Locate and map any other physical feature, natural or man-made, including any ordinary or mean high water boundaries that could affect the design of the project, as directed by the Contracting Agency.

EB5.15.4.5 After the Contracting Agency has reviewed the provided data, the Contractor may need to **extend the TIN & topographic mapping as specified** by the Contracting Agency.

EB5.15.4.6 Locate and tie, both horizontally and vertically, **all proposed and existing geotechnical sample locations**. The Contractor shall stake the baseline or sample locations as directed by the Contracting Agency.

EB5.15.5 Bridge Site/Drainage Survey. The Contractor shall perform drainage surveys in the vicinity of proposed channel crossings or major drainages. All work shall be tied to project horizontal and vertical control. Surveys shall be performed as

specified in the Preconstruction or Drainage Manual unless otherwise directed by the Contracting Agency. The Contractor shall coordinate with the Contracting Agency for site-specific requirements. The data collected for these surveys shall be incorporated into the TIN and topographic files, and all shots taken shall be included in the project coordinate file.

For culverts 36 inches and over in diameter, 4 cross sections upstream and 4 cross sections downstream from the inlet and outlet of said culvert shall be surveyed. The spacing of these cross sections shall typically be equal to the average width of the existing streambed (i.e. 10 feet wide will then have cross sections taken at 10, 20, 30, and 40 feet up stream and downstream). Cross sections shall be taken perpendicular to the existing streambed. Shots shall be taken at: the thalweg, the toe of slope, the edge of existing water, ordinary high water, the top of bank, and one shot past the top of bank. The data collected for these surveys shall be incorporated into the TIN, topographic, and project coordinate files. The Contractor shall perform the following drainage survey work:

EB5.15.5.1 For bridge sites, the line of **ordinary high water** shall be located. The Contractor shall search for evidence of extreme high water and locate it at the existing structure. These items shall be located both horizontally and vertically. The Contractor shall complete the appropriate sections of the Contracting Agency's Bridge Site Survey Form.

EB5.15.5.2 Prepare a topographic map of each bridge site. The map shall show the ordinary high water elevation (or mean high water in tidally influenced areas) and indicate the edge of water at the time of the survey. All buildings, dikes, rock outcroppings and other physical features shall be noted on the map.

EB5.15.5.3 Additional data collection for the Hydraulic Report may be required after the design has reached the Local Review stage.

EB5.15.5.4 Prepare a Bridge Site Report, which is a summary in ASCII format noting pertinent information such as horizontal and vertical control basis, date of survey, bridge number, name of water body, ordinary high water coordinate point numbers, extreme high water coordinate point numbers, existing structure coordinate point numbers, and note whether body of water is navigable.

EB5.15.6 Special Features. The Contractor shall collect ground elevation data necessary and stake the location of project specific appurtenances to the roadway (retaining walls, breakwaters, special ditches, turnouts, sound barriers, etc.) as necessary for their design and field review by the Contracting Agency.

EB5.15.7 Deliverable Items. The deliverables shall be organized electronically in folders according to the following list. Only submit what is required for your specific project. Do not submit extra information not required by the Contracting Agency. Name the files and folders according to what they represent. Do not use contractor specific job numbers. CAD drawings should be named in such a manner that anyone can tell what it represents without having to open the drawing. An example would be "Sleetmute_Topo.dwg", and not "06-342.dwg". The Contractor shall submit the following items related to their survey to the AK DOT&PF Survey Section:

Deliverable Description

- A. Field Books: The original field books or PDF indexed, reduced, stamped and checked. (EB5.4)
- B. Point Files: An ASCII coordinate file containing all recovered, computed, and topographic points in the local system (if provided). Electronic format shall be submitted. Elevations that are not valid TIN elevations shall be coded as such in the descriptor. (EB5.8)
- C. Descriptors: An ASCII file listing all descriptors used and an expanded description of their meanings. Descriptors not used on this project shall not be included in this list. (EB5.8)
- D. Survey Report and Control Summary: Horizontal and vertical control summaries in ASCII format. The Contractor shall also provide stamped annotated copies of control computations and control adjustments, including a check shot report. (EB5.14)
- E. Survey Control Diagram (Record of Survey): Electronic CAD and PDF copy. (EB5.14.2)
- F. Survey Control Sheet(s): Electronic CAD and PDF copy. (EB5.14.3)

Deliverable Description

- G. GNSS Data: For GNSS control surveys, the Contractor shall provide RINEX2 GNSS data files of 8 hours length for at least 2 control points, along with any GNSS processing or OPUS reports. (EB5.14.1.3)
- H. Electronic Pictures: Organized folders containing all of the control, monument ties, and project site photos. Do not use separate folders for each point. If applicable, the point number should be referenced within the image filename. (EB5.14.4)
- I. TIN: All TIN files with a sealed and signed certificate of accuracy. Quality control check spreadsheet showing the differences from the true values (EB5.7).
- J. Bridge Site/Drainage Survey mapping: Electronic drawing files and TIN files (EB5.15.5.2)
- K. Bridge Site Report: Refer to the Preconstruction or Drainage Manual, and or the Contracting Agency for possible additional information. (EB5.15.4)
- L. Project Drawing: A single complete and edited AutoCAD drawing file of the entire survey limits, containing topographic mapping (points, surfaces, annotations, metadata), base-mapping, bridge site/drainage surveys. (EB5.15.4)
- M. Air Photo Report: A report of the photogrammetric control shall be provided including all ground control points, aerial photography camera logs, airborne GNSS control procedures and results, analytical aero triangulation results, current camera calibration reports, and other data associated with control of the aerial photography. (EB5.15.3.1)
- N. Ortho Photo Mosaic: .tif format files shall be delivered in files less than 250MB in size. A compressed image file in Mr. Sid format shall also be included. An index file showing the project area and the areas covered by the individual files shall be included. (EB5.15.3.1)

EB5.16 SURVEYING FOR RIGHT-OF-WAY

EB5.16.1 General. The Contractor shall perform the following services to the standards in EB5.14. Typically the surveying for ROW is performed after horizontal control is established for the project. Any exceptions shall be discussed at the project pre-work meeting.

EB5.16.1.1 Prior to commencement of the survey, the Contractor shall review any title documents and mapping in the Contracting Agency's possession which is considered relevant to the project. The Contractor shall be responsible for researching additional relevant documentation from other sources. These documents include but are not limited to the following:

Bureau of Land Management (BLM) and Department of Natural Resources (DNR) land status plats, BLM township survey plats, Mineral and U.S. Survey plats and field notes, any records of survey, subdivisions, and relevant engineering control surveys, United States Coast and Geodetic Survey (USC&GS)/ National Geodetic Survey (NGS) control diagrams-descriptions, DOT&PF right-of-way records and other easement or boundary documents of record, DOT&PF engineering as-builts, DOT&PF Airport Leasing documents, DNR surveys, and aerial photos, DEC Community Profile Maps, Local or Municipal data.

All research for property corner ties (generally includes local platting authority subdivision plats and right-of-way plats, BLM U.S. Surveys, state land survey plats, waiver documents, deeds, record of surveys and monument records) should be done prior to commencement of searching and tying property and ROW controlling corners.

EB5.16.1.2 Tie the nearest Public Land Survey System (PLSS) monuments (Section, 1/4 Section and 1/16 Section Corners) left and right of the project Right-of-Way corridor or if existing monuments that represent the legal corner positions do not exist at those locations, sufficient additional rectangular monuments and/or accessories to control the computations of the legal locations of those corners per the relevant BLM Manual of Surveying Instructions for Public Lands. Any corner monument in need of rehabilitation or re-monumentation shall first be photographed, and then have

rehabilitation accomplished prior to tying the monument location and re-photographing the final condition. The intent of the PLSS monument ties is to define the larger remaining parcel surrounding the existing road Right-of-Way.

Tie all existing centerline monumentation throughout the project limits including two centerline monuments at each end that extend beyond the limits of the project. Additional PLSS monuments shall be recovered to allow section breakdown for property boundary determination as directed by the Contracting Agency. Tie adequate centerline monumentation on side streets to determine side street alignment to the project limits. A minimum of two side street centerline monuments shall be tied. If side street centerline monuments are not recovered then sufficient block or lot corners will be tied to define the side streets.

For the initial surveys all property corners within and along the existing ROW and the ROW centerlines should be searched for, documented and tied. In most cases, there will be some non-fronting property corners also required to be tied to setup subdivision blocks, survey boundaries and side-street ROWs. Sufficient control is required to establish the location of all surveys adjoining the ROW, or where acquisitions are planned. The extent of the corners to be tied normally is discussed and clarified during contract negotiations or at the survey pre-work meeting.

EB5.16.1.3 For projects with PLO ROWs or other ROWs dependent on the physical road location (such as prescriptive claims), tangent asbuilts are required. This procedure normally requires the field determination of pavement or unpaved surfaces centerline by physical measurement, and then location of those points. Points are normally surveyed near each tangent end and a minimum of 3 points on curves. The number of shots actually required depends on curve length and degree of curve and should be clarified in writing at the pre-work meeting. The Contractor at the direction of the Contracting Agency may also be tasked with developing an alignment and locating existing slope or clearing limits. Please consult the Contracting Agency's ROW Engineering section for guidance.

EB5.16.2 Record of Survey. A Record of Survey shall be prepared for recording in the appropriate Recording District for the Right of Way survey. All Right of Way surveying completed above in section EB5.16.1 shall be included in the Record of Survey. Consult with the Contracting Agency for guidance in the preparation of the Record of Survey.

EB5.16.3 Annotated Plats and Research Documents. PDF Copies of all of the research documents for the rectangular survey, centerline monuments, ROW monuments and property corners shall be provided, along with annotations of whether the point was searched for and not found, or monument destroyed, or if found it's corresponding project point number. These annotations do not need to be "works of art", and many times are the original paper plat copies, or scans of such, that the field crews had in the field with them. The annotated plats should be indexed in some method (by Section Location, MOA grid, or other logical means), placed in labeled folders organized by the indexing scheme.

EB5.16.4 Additional Topography for Right-of-Way Acquisition. The Contractor shall collect all topographic information that may affect the cost and/or schedule of defined right-of-way acquisitions for the project, such as culverts, land service or access roads, improvements, apparent contaminated soils or waters, buried fuel tanks, fences and any structures. Septic system, well and building locations are examples of pertinent data, usually outside of the acquisition area, that may affect the value of the right-of-way to be acquired.

EB5.16.5 Deliverable Items. The deliverables shall be organized electronically in folders according to the following list. Only submit what is required for your specific project. Do not submit extra information not required by the Contracting Agency. Name the files and folders according to what they represent. Do not use contractor specific job numbers. CAD drawings should be named in such a manner that anyone can tell what it represents without having to open the drawing. An example would be "Sleetmute_ROW.dwg", and not "06-342.dwg". The Contractor shall submit the following items related to their Survey to the AK DOT&PF Survey Section:

Deliverable Description

- A. Field Books: The original field books or PDF indexed, reduced, stamped and checked. (EB5.4)
- B. An ASCII coordinate file containing all recovered, computed, and topographic points in the local system (if provided). Electronic format shall be submitted. Elevations that are not valid TIN elevations shall be shown as -9999. (EB5.8)
- C. An ASCII file listing all descriptors used and an expanded description of their meanings. Descriptors not used on this project shall not be included in this list. This file shall be submitted with the draft coordinate file. (EB5.8)
- D. Right of Way Survey Report Memo. A brief description of the survey methods, equipment,

computations, quality control checks and accuracy estimates.

E. Survey Control Diagram (Record of Survey): Electronic CAD and PDF copy. (EB5.14.2)

F. Annotated Plats and Research Documents. (EB5.16.3)

G. GNSS Data: For GNSS control surveys, the Contractor shall provide RINEX2 GNSS data files of 8 hours length for at least 2 control points, along with any GNSS processing or OPUS reports. (EB5.14.1.3)

H. Electronic Pictures: Organized folders containing all of the control, monument ties, and project site photos. Do not use separate folders for each point. If applicable, the point number should be referenced within the image filename. (EB5.14.4)

EB5.17 RIGHT-OF-WAY MAPPING

EB5.17.1 General. The Contractor shall perform the services necessary to establish the existing Right of Way, and, prepare ROW Lines for Construction Plans, Base Maps, Right of Way Maps, Parcel Plats, Airport Property Plans, Airport Land Occupancy Maps, and Right of Way Acquisition Plats in accordance with the DOT&PF Right of Way Manual and specific instructions from the Contracting Agency.

EB5.17.2 ROW Lines for Construction Plans. The Contractor shall submit an electronic drawing file which contains the existing ROW lines, existing ROW centerline, adjoining property lines and subdivisions. The Contractor shall include a narrative of the ROW that is being shown. Narrative shall include source documents and methods used to determine existing rights-of-way.

EB5.17.3 Base Maps shall show the entire project limits and shall include a DOT&PF standard Right of Way title sheet, legend sheet, tract maps, plan sheets, monument summary sheets, and general notes sheet including a source document table using Contracting Agency supplied AutoCAD format at the scale and layout specified by the Contract Manager. The plan sheets shall show the following information:

- A. Existing property boundaries, including all Public Land Survey System survey lines.
- B. All subdivisions, including name, plat number, lot and block, or aliquot part description, and easements as shown.
- C. Existing right of way centerline.
- D. Existing rights-of-way
- E. Improvements.
- F. Other features required by the Right of Way Manual and /or the Contracting Agency.

EB5.17.3.1 When preparing Base Maps, the Contractor shall (a) thoroughly document sources of existing rights-of-way (b) resolve problems with existing Right of Way and boundary locations and (c) analyze preliminary engineering information to determine where additional survey ties are required. The Contractor shall provide a written summary of (any significant) Boundary Problems encountered in making specific boundary determinations, including rationale for the solution. The Contractor shall provide digital copies of all research with the preliminary Base Map.

EB5.17.3.2 The Contractor shall not begin preparing Base Maps without prior specific written authorization from the Contracting Agency.

EB5.17.4 Right of Way Maps shall show the entire project limits and shall include a DOT&PF standard Right of Way title sheet, legend sheet, tract maps, plan sheets, and monument summary sheets. The plan sheets shall show all the information required for the Base Maps plus the following information:

- A. Proposed Right of Way.
- B. Proposed project centerline.
- C. Station and offsets to right of way limits.
- D. Easements.
- E. Parcels.
- F. Parcel Information Block.
- G. Proposed slope limits.
- H. Revision block.
- I. Other features required by the Right of Way Manual and /or the Contracting Agency.

- J. For Airport Property Plan and Airport Acquisition Plat (in addition to the above):
1. Plan view showing Tracts and Parcels.
 2. Runway Centerline end coordinates in the NAD83 CORS datum.

EB5.17.4.1 When preparing Right of Way Maps, the Contractor shall:

- A. Resolve survey conflicts with existing right of way and boundary locations.
- B. Analyze preliminary engineering information to determine where additional survey ties are required.
- C. Examine Title Reports and adjust preliminary boundaries, add additional easements and update owner information as required.
- D. Compute the Take and Remain areas of each parcel based on right of way requirements supplied by the Contracting Agency.
- E. Prepare Map per appropriate platting codes.

EB5.17.5 Parcel Plats. The Contractor shall prepare plats for all parcels to be acquired for this project when directed by the Contracting Agency. Note: full takes do not need a parcel plat prepared. Parcel plats shall contain the information required by the DOT&PF Right of Way Manual. . The Contractor shall make revisions to Parcel Plats requested by the Contracting Agency. Parcel Plats shall use the Contracting Agency's standard 8-1/2 by 14 inch format and be submitted as a PDF or in a format specified by the Contracting Agency. Plats shall be at a scale suitable for legibility and clarity of detail using Contracting Agency supplied AutoCAD format and shall contain information as required by the DOT&PF Right of Way Manual and the parcel plat checklist. A Title block and border drawing file will be supplied by the Contracting Agency.

EB5.17.6 Airport Property Plan and Airport Acquisition Plat. The Contractor shall prepare an Airport Property Plan according to the DOT&PF Right of Way Manual. The Airport Property Plan is considered similar to a Base Map and relates the existing property boundary and property status. An Airport Acquisition Plat is necessary for acquisition areas in the Unorganized Borough and is required to follow the regulations as set for Right-of-Way Acquisition Plats by Department of Natural Resources.

EB5.17.7 Airport Land Occupancy Maps. The Contractor shall research current and historic airport tenant lease documents, resolve any found discrepancies and map errors, and provide an updated Airport Land Occupancy (LO) Map, as directed by the Contracting Agency.

EB5.17.8 Right-of-Way Negotiations. The Contractor shall provide technical support for right-of-way negotiations. This shall include interpreting documents prepared for the project and explaining project impacts to the Contracting Agency's personnel, property owners, and others. The Contractor shall also attend meetings as required to make presentations and answer questions.

EB5.17.9 Pre-Acquisition Meeting. When requested by the Contracting Agency, the Contractor shall attend the pre-acquisition meeting. The purpose of this meeting is to discuss proposed project features and impacts to adjoining properties and parcel configuration prior to plat approval and acquisition. The Contractor should be prepared to discuss any design features which may affect adjoining properties such as project alignments, pathways, sidewalks, medians, curb and gutter, slope limits, impacts to driveways and utilities. Adjoining property information shall include lot boundaries, buildings, driveways, and any other features/improvements that will help the Contracting Agency in negotiations with affected property owners and others to assess project impacts. In addition to preliminary right of way plans, the Contractor may be requested to provide additional visual displays for clarification.

EB5.17.10 Reviews and Schedule. The Contractor shall submit drafts of the Base Maps, Right of Way Maps and Parcel Plats, for the Contracting Agency's review, in accordance with the following: Base Maps shall be submitted with the Local Review Assembly. Right of Way Maps including proposed takes for project construction shall be submitted with the Plans-In-Hand Review Assembly. Right of Way Maps including proposed takes for the project and all required utility relocations shall be submitted within four months of the Plans-In-Hand Review submittal. Current Right of Way Maps shall be submitted with the PS&E Assembly. The Summary of Boundary Problems shall be submitted with the drafts of Base Maps. The Contracting Agency shall have a minimum of four weeks for the return of written comments. The Contractor shall address comments to the satisfaction of the Contracting Agency prior to submitting final documents for Right of Way Certification.

EB5.17.11 Deliverable Items. The Contractor shall submit draft and final Base Maps, Right of Way Maps and Parcel Plats in PDF and DWG format for Contracting Agency review. Electronic copies of all research and the Summary of Boundary Problems shall be submitted with the draft Base Map. If requested by the Contracting Agency, the Contractor shall provide full sized mylars with original signature for recording along with the final Base Map submittal. Prior to Right of Way Certification, the Contractor shall submit two final Right of Way Maps on 11x17 paper with original signatures and one full size mylar with original signature.

EB5.17.12 Provided Items. The Contracting Agency will provide the following (item A can be found on the DOT&PF web site. Items B-D can be obtained on the DOT&PF FTP site. Call 269-0680 for site addresses):

- A. One copy of the Title and Plans Section from the DOT&PF Right of Way Manual.
- B. Samples of final drawings, parcel plats, and title reports.
- C. Civil 3D Drawing Template
- D. The Contracting Agency's Standard Right of Way legend sheet.
- E. Original Title reports for each property to be acquired.

EB5.18 Pre & Post Construction Surveys

EB5.18.1 General. In order to best perpetuate the positions of DOT/PF Project Centerline Monuments, we encourage the use of Static GPS ties to permanent control stations that are set outside project limits, and are expected to last well beyond construction.

EB5.18.2 Pre-Construction. When directed by the Contracting Agency upon completion of the design phase of the project, but prior to advertising for construction, the Contractor, using the previously established project control shall monument the project (PC's, PT's, and no-curve PI's, etc.) using conventional methods. All monuments established shall consist of a minimum 5/8" dia. X 24" rebar (5/8" dia. X 8" in pavement) with a 2" dia. cap, and stake nearby. Once set, all monuments shall be photographed and re-tied to verify their position (EB5.14), and a comparison to the design coordinates shall be presented to the Contracting Agency in spreadsheet format. This information shall be presented in project staking report.

Static GNSS Control points for this task shall be set at approximately two mile intervals, or closer for a small project, outside of the construction limits, so as to last for the duration of the project. A plan identifying the type of monument to be set for control, and its proposed location, shall be submitted to the Contracting Agency prior to the work being performed. Control points from the design survey effort may be used for this effort upon approval.

Monuments that may be disturbed during construction shall be referenced by static GNSS to the off-project control. It shall be the Contractor's responsibility to coordinate with the Agency or Firm developing the Right of Way Mapping to identify these monuments. Two in line conventional reference points, set outside the construction limits, may be used in the cases where static GNSS will not work. Two vectors at a minimum shall establish the position of the monument to be referenced. These two vectors shall differ by no more than 0.08 feet.

This procedure is further explained here:

http://www.dot.state.ak.us/creg/dot-cadastral/Construction_Surveys/Centerline_Referencing_and_Perpetuation_2011.doc.

EB5.18.3 Post-Construction: When directed by the Contracting Agency, and upon completion of the construction phase of the project, the Contractor shall establish and monument the project and a random control line. Monument type and spacing shall be determined in discussions with the Contracting Agency. In the case of a project centerline, the points shall be established using the data from the Pre-Construction effort. Right of Way monumentation that was referenced prior to construction shall be field verified that it was not disturbed. A digital photo shall be required as proof. Any disturbed ROW monuments shall be reestablished as part of this effort. This procedure is further explained here http://www.dot.state.ak.us/creg/dot-cadastral/Construction_Surveys/Centerline_Referencing_and_Perpetuation_2011.doc. A final

Record of Survey or data incorporation into the project Right of Way Mapping shall be completed that shows any new monumentation set.

EB5.18.4 Final Record of Survey (Airports). When directed by the Contracting Agency, and upon completion of the Construction phase, the Contractor shall complete the final Record of Survey which may include, but is not limited to, the following tasks: FAA Aeronautical Survey, locate all navigational aids, as built the runway using guidelines provided by the Contracting Agency, set or check the airport boundary monumentation, set or check the access road monumentation, tie into older horizontal and vertical datums, and establish threshold coordinates. If land was acquired as part of the project a Right-of-Way Acquisition plat will be developed and recorded in the appropriate recording district.

Deliverable Description

- A. Field Books: The original field books or PDF indexed, reduced, stamped and checked. (EB5.4)
- B. Point Files: An ASCII coordinate file containing all recovered, computed, and topographic points in the local system (if provided). Electronic format shall be submitted. Elevations that are not valid TIN elevations shall be coded as such in the descriptor. (EB5.8)
- C. Descriptors: An ASCII file listing all descriptors used and an expanded description of their meanings. Descriptors not used on this project shall not be included in this list. (EB5.8)
- D. Survey Report and Control Summary: Horizontal and vertical control summaries in ASCII format. The Contractor shall also provide stamped annotated copies of control computations and control adjustments, including a check shot report. (EB5.14)
- E. Record of Survey for centerline and random control, and/or Monument of Record Forms (EB5.18.3) if this information is not incorporated with the project Right of Way Mapping closeout effort. (EB5.17 or EB5.19)
- F. Project Staking Report (EB5.18.2)
- G. GNSS Data: For GNSS control surveys, the Contractor shall provide RINEX2 GNSS data files of 8 hours length for at least 2 control points, along with any GNSS processing or OPUS reports. (EB5.14.1.3)
- H. Electronic Pictures: Organized folders containing all of the control, monument ties, and project site photos. Do not use separate folders for each point. If applicable, the point number should be referenced within the image filename. (EB5.14.4)
- I. Right of Way Acquisition plat. (EB5.17.6)
- J. Airport as-built Record of Survey (EB5.18.4)

EB5.19 Right of Way Engineering Closeout Services

EB5.19.1 Right of Way Engineering Services: *Engineering Services* may include identification of field surveying and mapping services necessary to close out the various projects, such as a Record of Survey or ROW Acquisition Plat, but the performance of the identified field surveying and associated mapping services will not be part of the initial *Right of Way Engineering Services*.

- A. The Contractor shall perform the services necessary to reconcile the Right of Way conveyance documents with the Right of Way Mapping in accordance with the Department Project Close Out check list, and specific instructions from the Contract Manager.
- B. The Contractor should check the centerline and right of way geometry (Bearings, Distances, Curves, Station-offsets, Monument Summary Tables etc.) for any mathematical errors to verify that the right of way can be computed from the information shown.
- C. The Contractor shall proof read the vesting documents of record on file with the Department and/or the Records Office. The written legal description and parcel plats will be checked against the Right of Way mapping both visually and for mathematical closure.

- D. The Contractor shall review the Right of Way mapping. The Right of Way mapping shall include (if it applies) the following information:
1. Information as defined in the Project Close Out check list.
 2. Lands purchased in excess to the ROW needed for the project. These lands will be identified on the ROW mapping as "X" or "R" parcels on older projects.
 3. Commissioner's Quit Claim Deed or Relinquishment.
 4. Lands acquired from DNR will be referenced to the ADL number associated with the parcel.
 5. Files involving these parcels are contained within the Department Right of Way Section.
 6. Final Judgments need to be researched if there was a declaration of taking on the project.
- E. When reviewing the Right of Way mapping, the Contractor shall identify discrepancies among the ROW mapping, written legal descriptions, and parcel plats. The Department will review and approve and/or modify the corrective actions the contractor is to take.
- F. When directed by the Department the Contractor shall hand edit the original mylar Right of Way mapping using drafting ink and lettering sets and update any electronic drawings provided by the Department.
- G. The Contractor will submit copies of the edited ROW mapping to the Contracting Agency who will then submit the plans to the appropriate platting authority for plat approval. When directed by the Contracting Agency, the Contractor will make the final changes to the mylars and electronic drawings then submit for final review to the Contracting Agency. After platting authority and Department approval the contractor will sign the mylars using the Department's Contractor Closeout Certificate.

EB5.20 Aeronautical Surveys

EB5.20.1 General When directed by the Contracting Agency the Contractor shall perform any and all necessary tasks required by current FAA Advisory Circulars related to the performance and delivery of Aeronautical Surveys. The type and level of effort required will be determined by the Contracting Agency at the time of request. Additional design or ROW survey information may be requested concurrently with an Aeronautical Survey task.

The Contractor shall contact the Contracting Agency's Maintenance and Operation Supervisor, in the appropriate district, to coordinate airport entry procedures and shall exercise caution when working in the vicinity of the runway.

The Contractor shall coordinate with the Contracting Agency prior to fieldwork for threshold locations, runway length, and runway width; no changes to these shall be made without Contracting Agency approval.

Data providers shall make maximum use of existing data for the airport that is traceable to the source to meet the requirements of this Statement of Services before undertaking additional data collection.

EB5.20.2 Services. For each of the airports, the Contractor shall perform the following tasks:

The ACs identified below detail the data collection requirements and accuracies for the AOC Survey.

AC 150/5300-16A "General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey."

AC 150/5300-17C "General Guidance and Specifications for Aeronautical Survey Airport Imagery Acquisition and Submission to the National Geodetic Survey."

AC 150/5300-18B "General Guidance and Specifications for Submission of Aeronautical Surveys to National Geodetic Survey (NGS): Field Data Collection and Geographic Information System (GIS) Standards."

Note: The FAA Airports GIS (AGIS) website and the ACs mentioned above are currently being refined and changes to the process should be expected. The Contractor shall use the most current AC upon the start of work for each airport.

EB5.20.3 Record of Survey. A Record of Survey shall be prepared for recording in the appropriate Recording District for the Airport Monuments. All temporary monumentation completed above in Section EB5.20.2 shall be included in the Record of Survey. Consult with the Contracting Agency for guidance in the preparation of the Record of Survey.

EB5.20.4 Deliverable Items. Deliverables will be submitted to the FAA AGIS Portal, and copies of final FAA approved deliverables will be submitted to the Contracting Agency in a local geodetic system as specified by the contracting agency or developed by the Contractor as directed by the Contracting Agency. The Contractor shall submit, for each airport, the following items:

Deliverable Description

A. AC 150/5300-16A Deliverables:

Geodetic Control Plan

Geodetic Control Data and Report

B. AC 150/5300-17C Deliverables:

Imagery Plan

Georeferenced Imagery & Orthophotos

Orthophotos

C. AC 150/5300-18B Deliverables:

Survey and Quality Control Plan

Airport GIS Survey Data

AutoCAD Support Drawings and Files

Final Project Report & Spreadsheet

EXHIBIT B-6
SAMPLE MONTHLY PROGRESS REPORT

ATTENTION: (Agency Project Manager, Agency Name)

FROM: (Contractor's Project Director, Contracting Firm)

PROJECT: (Project title and numbers)

CONTRACT NO:

PROGRESS REPORT NO:

DATE:

INCLUDES ALL WORK TO (insert date)

END OF LAST INVOICE PERIOD (insert date)

1. PERCENTAGE COMPLETION AND ACTUAL COST PER TASK. INCLUDE THE TOTAL CUMMULATIVE PROGRESS TO DATE (table format).

TASK | TOTAL CONTRACT PRICE | ACTUAL COST TO DATE | % COMPLETE

2. SUMMARY OF WORK EFFORT PER TASK DURING THE REPORTING PERIOD.
3. LIST OF DELIVERABLES WITH SCHEDULED SUBMITTAL DATE, EXPECTED SUBMITTAL DATE AND % COMPLETE (table format).
4. PLANNED WORK FOR THE NEXT REPORTING PERIOD PER TASK.
5. KNOWN OR ANTICIPATED DELAYS/PROBLEMS PER TASK.
6. LIST ANY OUT OF SCOPE OR ADDITIONAL WORK WITH THE ESTIMATED COST AND/OR SCHEDULE IMPACTS PER TASK.

EXHIBIT B-7
PUBLIC NOTICE LANGUAGE

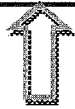
B7.1 Use this language when space is limited or there is an added cost, e.g. newspaper ads, flyers, postcards.

The DOT&PF operates Federal Programs without regard to race, color, national origin, sex, age, or disability. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi_statement.shtml. To file a complaint go to: dot.alaska.gov/cvlrts/titlevi.shtml

The DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to participate in this public meeting should contact

Contact person familiar with the project, phone number, and TDD number [711].

Requests should be made at least __ days before the accommodation is needed.



Allow enough time before the meeting to make the necessary arrangements to make the accommodation.

B7.2 Use this language when space is not limited and there is no additional cost, e.g. online notices.

It is the policy of the Department of Transportation and Public Facilities (DOT&PF) that no person shall be excluded from participation in, or be denied benefits of any and all programs or activities we provide based on race, religion, gender, age, marital status, ability, or national origin, regardless of the funding source including Federal Transit Administration, Federal Aviation Administration, Federal Highway Administration and State of Alaska Funds.

The DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to participate in this public meeting should contact

Contact person familiar with the project, phone number, and TDD number [711].

Requests should be made at least __ days before the accommodation is needed.



Allow enough time before the meeting to make the necessary arrangements to make the accommodation.

B7.3 Use the following language in a public meeting, e.g. project update or road closure.

The DOT&PF operates Federal Programs without regard to race, color, national origin, sex, age, or disability. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi_statement.shtml. To file a complaint go to: dot.alaska.gov/cvlrts/titlevi.shtml

The DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications should contact

Contact person familiar with the project, phone number, and TDD number [711].

EXHIBIT B-8 CENTRAL REGION GUARDRAIL DEFICIENCY PROCEDURE

OBJECTIVES:

1. Identify and replace unacceptable guardrail elements
2. Identify frequent and recurring damage.
3. Judge whether guardrail is beyond its Design Life.
4. Increase roadside recovery area to prevent rollovers or guardrail when cost-effective
5. Reduce guardrail maintenance needs by minimizing guardrail need or length

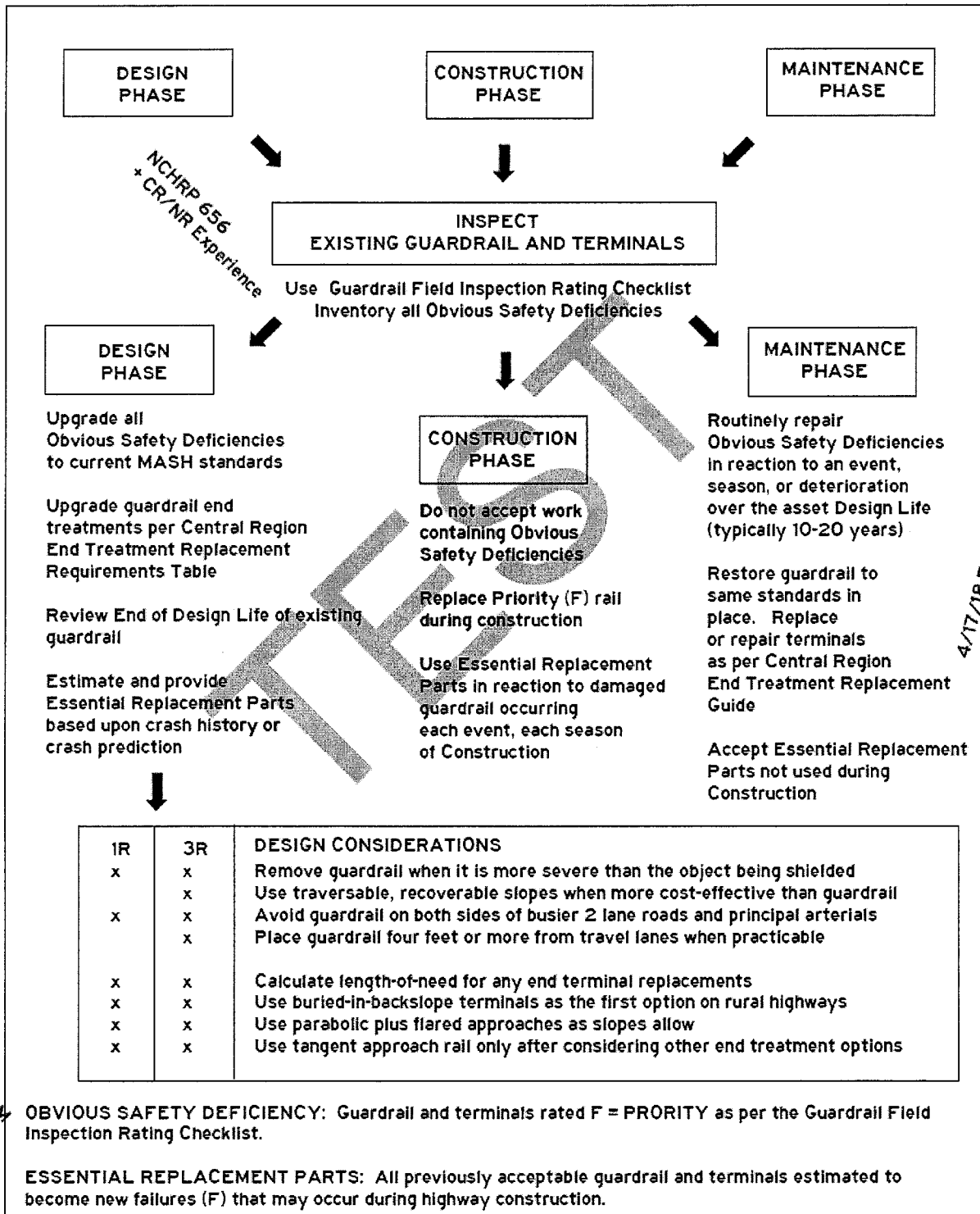


EXHIBIT B-9
CENTRAL REGION DOTPF
Guardrail End Treatment (GET)
Replacement Requirements

Alaska DOT&PF Guardrail End Terminal Replacement Requirements (Rev 05-31-18)										
Existing Guardrail End Terminal (GET)	Type of Project or Maintenance	Non-NHS			National Highway System (NHS)					
					Non-High Spd / High Volume < 45 MPH / < 6000 ADT			High Speed and High Volume >= 50 MPH / >= 6000 ADT		
		GET Condition			GET Condition			GET Condition		
		OK	Damage		OK	Deficiency		OK	Damage	
			F-Priority	D-Damaged		F-Priority	D-Damaged		F-Priority	D-Damaged
No existing guardrail	New Construction Projects	MASH	MASH	MASH	MASH	MASH	MASH	MASH	MASH	MASH
Non-MASH Compliant Or BCT's	4R Projects	MASH		MASH	MASH		MASH	MASH		
	3R Projects (Including Gravel to Pavement)	RNR		RNR	R350 BCT		R350 BCT	MASH		MASH
	1R Preventive Maintenance Projects				R350 BCT		R350 BCT	R350 BCT		
	State-funded maintenance (non-project)				RNR		RNR	RNR		R350 BCT
	Turned Down or Blunt Ends				All projects (4R, 3R, 1R)		MASH	MASH		MASH
	State-funded maintenance (non-project)	RNR		RNR						

Notes:

- **F - PRIORITY** and **D – DAMAGED** terminal ratings are per Central Region Guardrail Inspection Guide.
- Terminal replacement requirements may be waived for a current project, if a separate guardrail project is funded in the STIP to receive construction funding less than one year after construction begins on the current project, and will correct terminal deficiencies within the limits of the current project.
- *Make nothing worse.* If the Design creates the deficiency or makes it worse after project completion, then the deficiency should be remedied to MASH compliance by the Design.
- Terminal replacement is not required for terminals outside the clear zone. Those may be removed.

MASH: (Manual for Assessing Safety Hardware AASHTO 2009) MASH compliant terminal replacements are required. For MASH replacements, install embankment widening conforming to standard drawing G-20. Review Length-of-Need (LON) and widening location for all replacements. If embankment widening is not feasible due to slope steepness, height and constraints on the road footprint, document the reasons for nonconformance in the Design Study Report (DSR).

R350 BCT: NCHRP-350 compliant terminals can remain. Replace BCT's with a MASH compliant device.

RNR: Replacement Not Required. BCT's can remain. However, if terminals are not replaced, damaged parts still must be repaired through routine maintenance. When terminals are replaced, replacements must be MASH compliant.

1R Preventive Maintenance Projects: Federal Preventive Maintenance projects which resurface the roadway include asphalt surface treatments, rut filling, profiling, and similar work and may be done either by DOT&PF maintenance or contractors. This table does not apply to other preventive maintenance that does not change the surface pavement profile, such as crack sealing or striping.

Exhibit B-10

**DRAFT
COPY**

GUARDRAIL

FIELD

INSPECTION

RATING GUIDE



Spring 2019

GUARDRAIL FIELD INSPECTION RATING GRADES

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GUARDRAIL FIELD INSPECTION RATING GRADES

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GUARDRAIL FIELD
INSPECTION
RATING GUIDE

(F) PRIORITY

Replace

GRADE F

Unacceptable

Guardrail condition is poor, significantly damaged, or deteriorated towards its end of life.

Guardrail considered unable to absorb another vehicular impact and is a safety concern. A second impact results in unacceptable safety performance including barrier penetration and/or vehicle roll over.

Document unacceptable elements as a priority for consideration of replacement by all projects.



(D) DAMAGED

Repair

GRADE D

Damaged but functional

Guardrail may not be new. Condition is fair overall. Meets height standards. Isolated locations of damage, but no moderate or severe damage.

Guardrail considered functional - able to absorb additional vehicle impacts with acceptable safety performance.

Document damaged elements for repair, maintenance, or replacement under rehabilitation projects.



(A) ACCEPTABLE

Remain in place

GRADE A-B-C

New or Acceptable

Guardrail may be new or show little damage.

Condition is excellent to fair with minimal damage. Posts and rail appear to be in good working condition.

Documented inventory or field inspection ratings are not required. No repairs identified.



GRADE F RAIL: Priority conditions- Replace

F-MISS-RAIL

Missing Rail

- Replace as soon as crews are available
- Consider temporary barrier, crash cushions for extended periods (> 10 days during Construction).

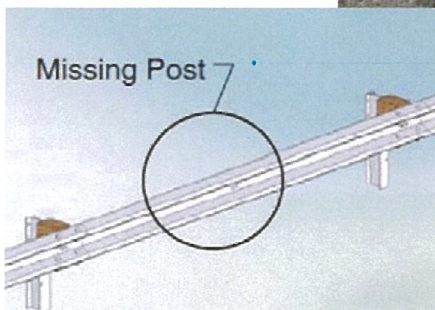
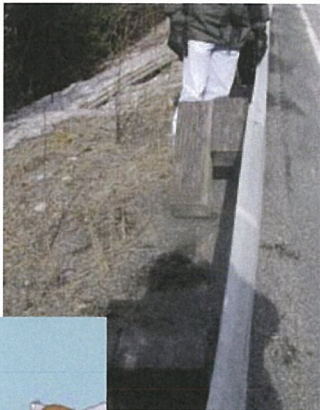


F- MISS-POST

Missing / Broken Posts

- 1 or more posts missing, cracked across the grain, broken, rotted or with metal tears, disconnected from ground level.

- Includes end posts on guardrail terminals



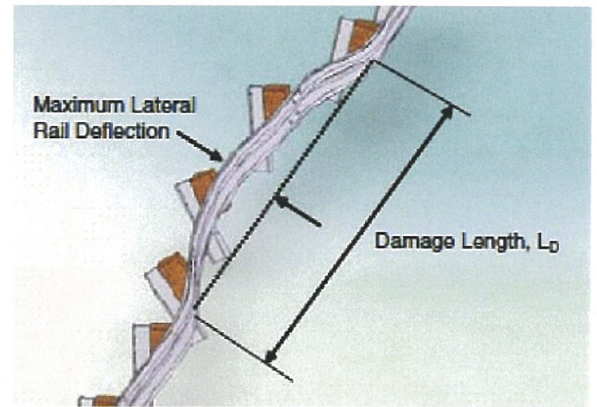
*Exception:
See Long Span
Detail.

F-DEFL

Post & Rail deflection >9"

Over a 25 foot length of rail (between any 4 standard posts):

- More than 9 inches of lateral deflection



F-HGT

Rail Height Too low or Too high

Over a 25 foot length of rail (between any 4 standard posts) top pvmt to top rail:

- Top of W-Beam or W31 rail higher than 32 inches

- Top of W-Beam rail less than 26 - 1/2 inches when spliced at post only (2017 and earlier installations.)

(2011 AASHTO RDG
pg. 5-17, Std Plan G-04)

- Top of W31 rail less than 30 inches when spliced between posts. (2018 and later installations.)

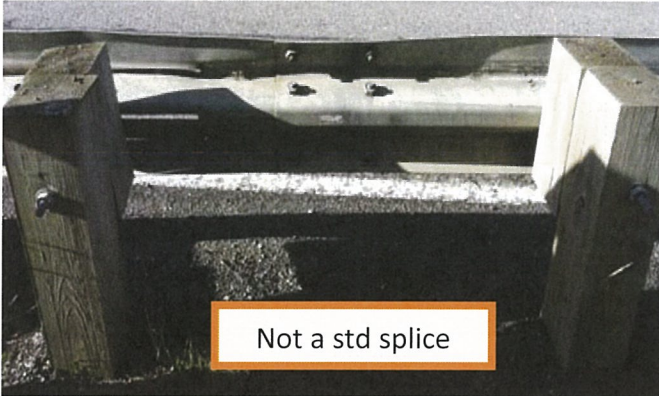
(Std Plan G-05)



F-IMPR-SPLC

Improper Splice

- Splice not consistently bolted at posts for older 29" rail.
- Allowed at 3' midspan only for 31" rail per Standard Drawings G-05
 - Not < 3' off adjacent post



F-EMBD

Loss of post embedment

More than one post completely exposed due to erosion.

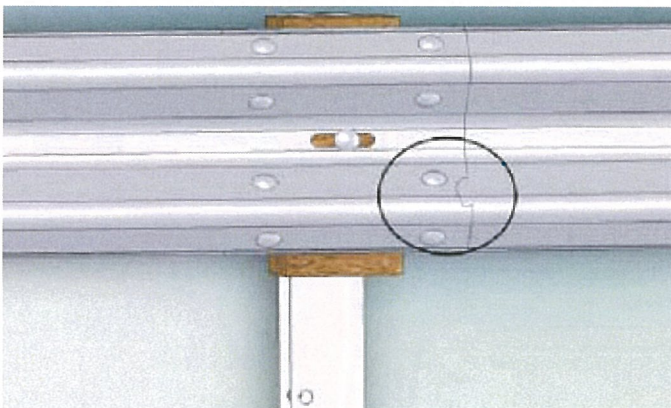


F-SPLICE-BOLTS

Damage at rail splice (2 or more splice bolts damaged)

2 or more splice bolts:

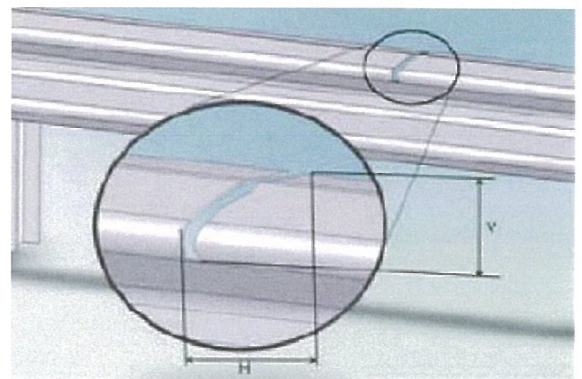
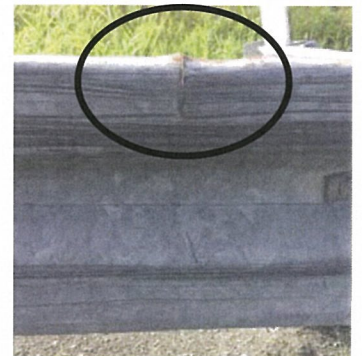
- Missing
- Damaged
- Visibly missing any underlying guardrail
- Torn through rail



F-VERT-TEAR

Vertical Tear

Any length vertical (transverse) tear

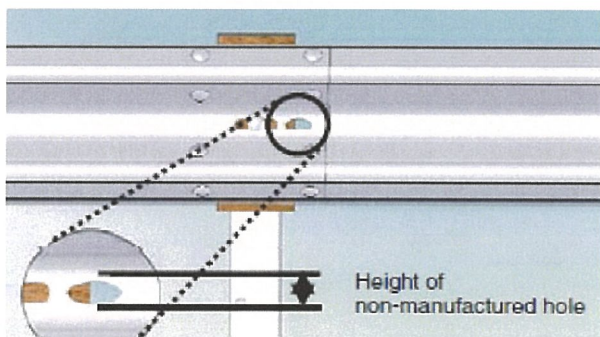


F-HOLES

Non-manufactured holes

Crash-induced holes, lug nut damage, or holes rusted through the guardrail, including:

- Any holes with a height greater than 1 inch
- More than 2 holes with a height less than 1 inch over a 12.5 foot length of rail
- Any hole which intersects the top or bottom edge of rail



GRADE F TERMINALS: Priority conditions - Replace

FT-HIT-TERM

“Activated” or Kinked Energy Absorbing Terminal or Crash Cushion

Impacted terminal no longer functional.

Repair or replace during routine maintenance and during work zone activity.

More than one post sheared or cracked.

Damage to foundations that disallows repair.



FT-HGHT

Terminal Height

Too low or

Too high

Over length of terminal
(37.5 to 50 feet):

Top of NCHRP 350 or
BCT terminal is less than
26 - 1/2 inches

Top of MASH terminal is
higher than 32 inches.



FT-REFL

No web reflectors within 50' end
terminal.



Post top
reflectors
OK.

FT-TX-TWST

"Texas Twist"

"Texas twist" is a turned down rail end bolted to ground
level



FT-SLPD-END

Sloped concrete ends at 35 MPH+

Do not use for speeds of 35 MPH or higher within
the clear zone.

Only for temporary or low speed use of 30 MPH or
less. (2011 AASHTO RDG 9.2.2)



FT-MOD

Modified Terminals

No timber drainage barrier
curb or open rock down
drains within end terminal
area 50'

No web reflectors on 50'
terminals.

Use end delineators only.



FT-NO-TRANS

No stiffened transition

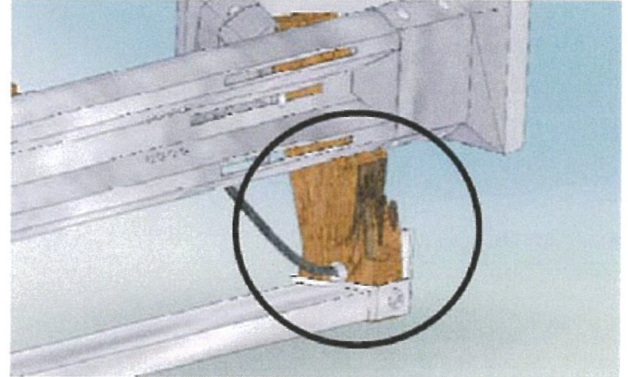
Guardrail transition not stiffened with increasing post density prior to rigid rail barrier/wall/ bridge connection



FT-DEND-POST

Damaged End Post

Not functional (sheared, rotted, cracked across the grain.)



FT-NO-BRIDG

No bridge connection

Guardrail transition not attached to bridge rail with a transition piece – there may be a gap between w-beam rail and bridge rail, with no connection.

May be older bridges – preexisting designs at the time. New standards may require opposing direction treatment.



FT-BCT

BCT Terminals

See Regional End Terminal Replacement Guide for replacement of Breakaway Cable Terminals (BCT's), MASH requirements.

BCT's are not acceptable on 45 MPH or greater roadways or NHS (National Highway System) Routes

BCT's have no extruding head, no horizontal rail and no ground strut slotted

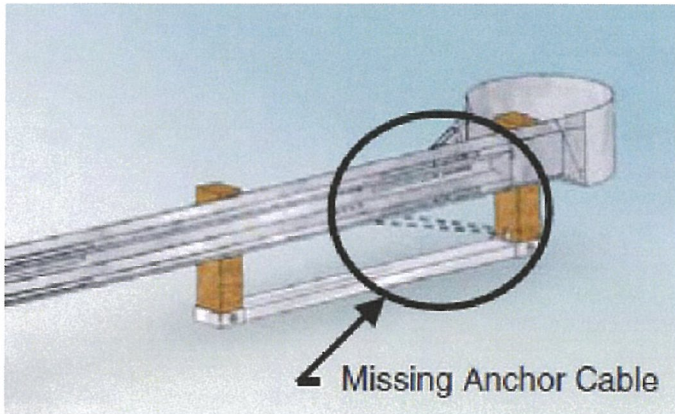


FT-MISS-CBL

Missing Anchor Cable

Missing anchor cable (usually found on a proprietary Slotted Rail Terminal with horizontal slots shown).

Anchor cable also needed on a Breakaway Cable Terminal (BCT).



FT-TERM-OFFST

End Terminal offset too far

See G-20

2' offset maximum (almost 3 ft. shown) For a 50' terminal.

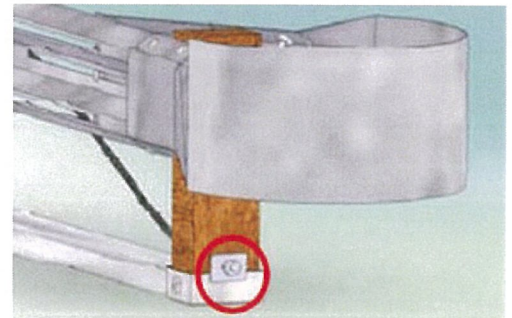


Use $\leq 25:1$ offset rate

FT-NO-BRGPL

Missing Bearing Plate

No added bearing plate at cable bolt on end post

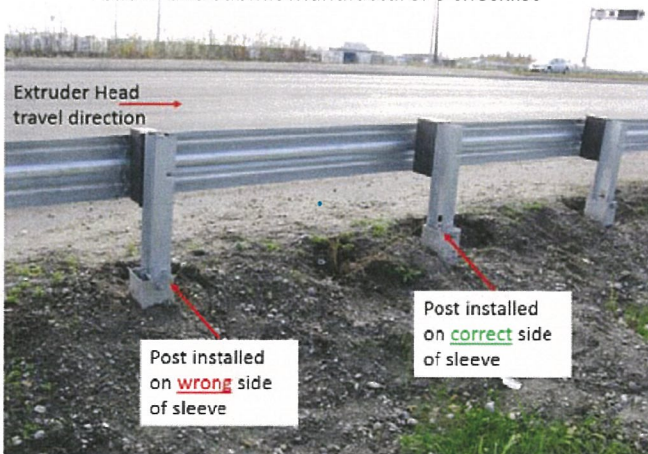


FT-MFR-INSTR

Steel Yielding Posts on wrong side of sleeve tube

Needs to be on upstream side per manufacturer.

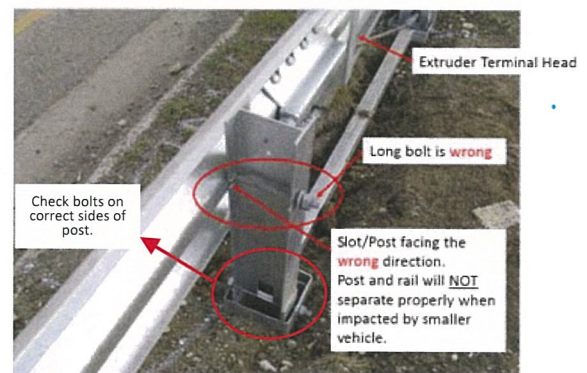
Follow and submit Manufacturer's checklist



FT-MFR-INSTR

Incorrect Terminal Installation

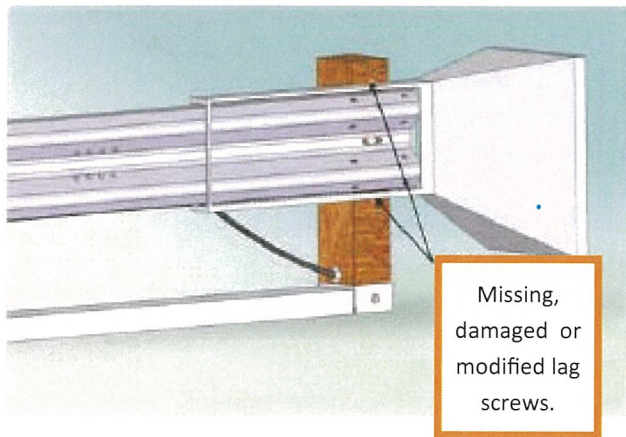
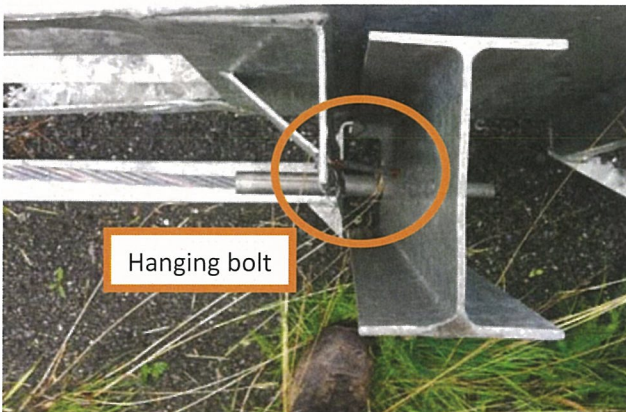
Post or rail slots facing wrong way to give way on impact. Long bolts where short bolt required. Review manufacturer's installation instructions for alignment and their checklist.



FT-LAG

Lag Screws

Missing or failed lag screws in wood post, extruding terminals Non-galvanized bolting of terminal leads to rusting, poor fit. Improper use of nails. Use manufacturer required connections.

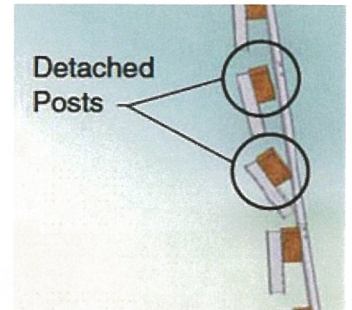


GRADE D RAIL: Damaged - Medium repair schedule

D-POST-SEP

Posts separated

- 2 or more posts with block out attached with a post/rail separation less than 3 in.
- 1 or more posts with a post/rail separation which exceeds 3 in.



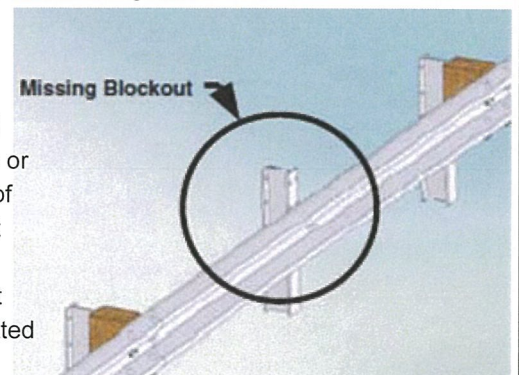
- If the block out is not firmly attached to the post, use the missing blockout

D-MIS-BLKT

Missing blockouts

- Any blockouts missing
- Cracked across the grain,

- Cracked from top or bottom of blockout through post bolt hole Rotted

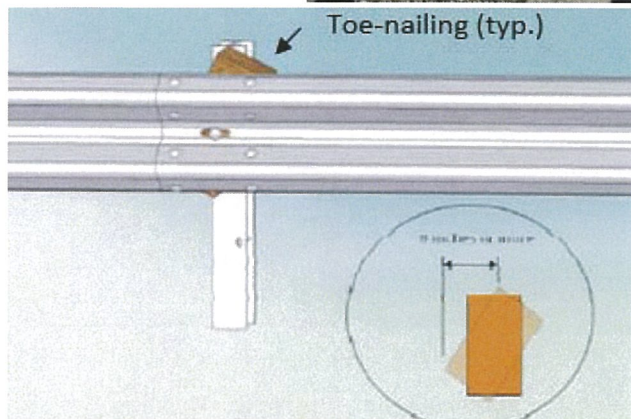


D-TWST-BLKT

Twisted blockouts

Note: Repairs of twisted blockout are relatively quick and inexpensive

(Missing galvanized 8d toe-nails may be the cause of rotation in the case of wood posts and wood blockouts)

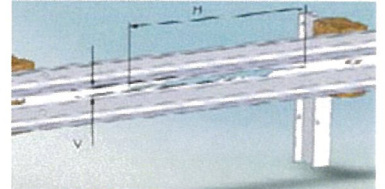


D-HORIZ-TEAR

Horizontal Tear

Horizontal (longitudinal) tears greater than 12 in. long or greater than 0.5 in. wide

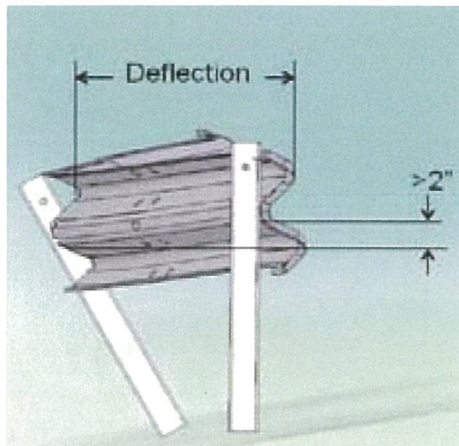
Note: for horizontal tears less than 12 in. in length or less than 0.5 in. in height, use the non manufactured holes guide-lines.



D-DEFL

Post and Rail Deflection $\leq 9"$

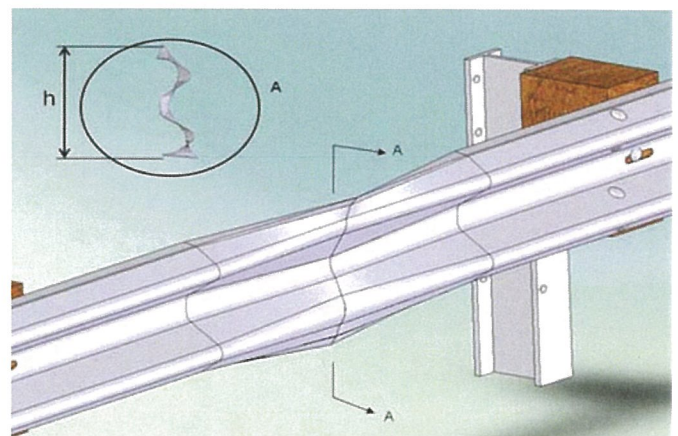
6-9 in. lateral deflection anywhere over a 25-ft length of rail or between any two adjacent posts



D-FLAT-RAIL

Rail Flattening

Rail cross-section height is more than 17in. (such as may occur if the rail is flattened), or Rail cross-section height is less than 9 in. (such as a dent to the top edge)

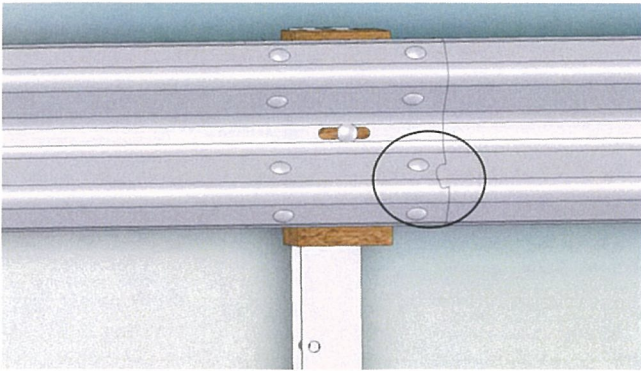


D-SPLIC-BOLT

Damage at rail splice
(only one bolt damaged)

1 splice bolt

- Missing
- Damaged
- Visibly missing any underlying rail
- Torn through rail



D-REFL

Web reflectors location poor

- Do not install on splice (spliced at post W-beam rail) (spliced mid span – W31 rail)
- Do not install on post bolts.
- Only install between posts.
- Post –top reflectors ok.

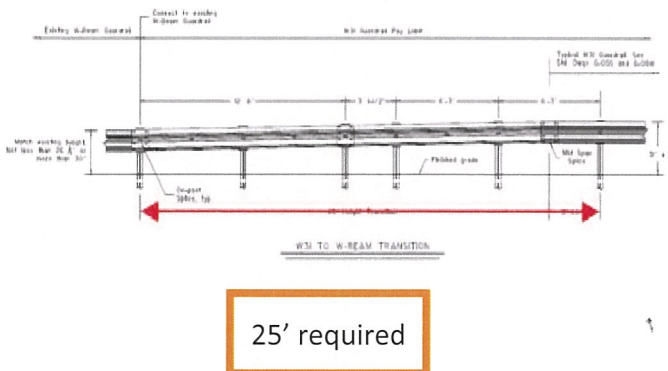


GRADE D TERMINALS: DAMAGED—MEDIUM REPAIR SCHEDULE

D-SHORT-TRANS

W-Beam (29") to W31
(31") Transition too Short

≥ 25 feet transition length
required per Std Drwg G-11



DT-STRUT

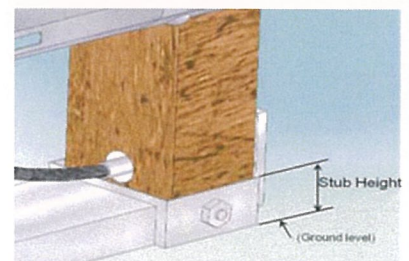
Stub Height or "Floating Strut"

Undercarriage
snagging concern

Bottom of strut
should be flush with
ground or pavement.

Problem when steel
soil sleeve tubes,
post base stubs have
steel height which
exceeds 4 inches up
from ground level.

"Floating Strut"
crossbar between 1st
and 2nd posts,
should be ≤4" from
top of strut to
adjacent gravel or
paved road surface
(not used on BCT's.)



DT-FLARE

Parallel Terminal Widening

Improper flare pad or approach cross slope (proper flare shown).

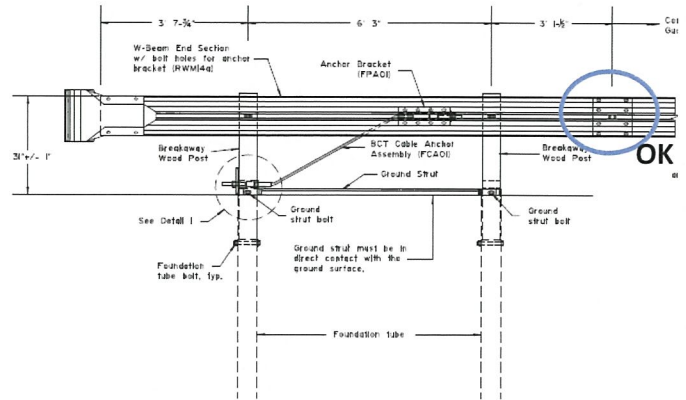


See Std Plan G-20

DT-ANCHR-SPLIC

W31 End Anchor Splice incorrect

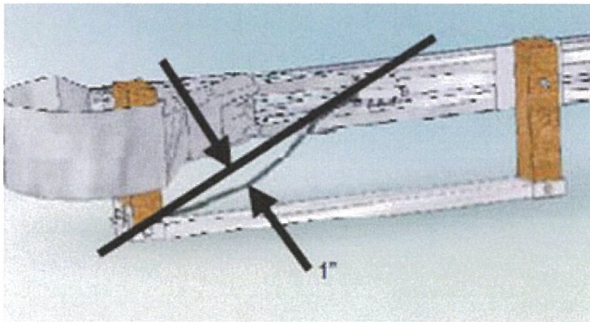
Splice needs to be mid span after second post



DT-CBL-SLK

Anchor Cable

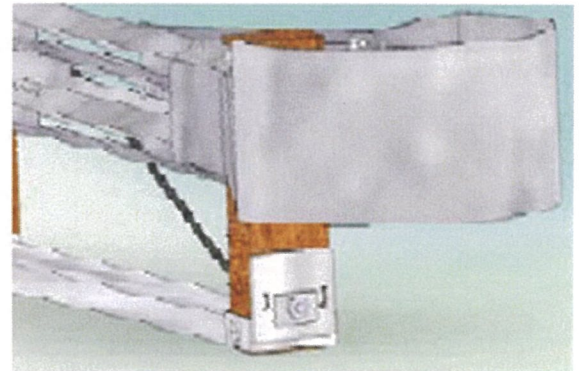
More than 1 in. of movement when pushed down by hand



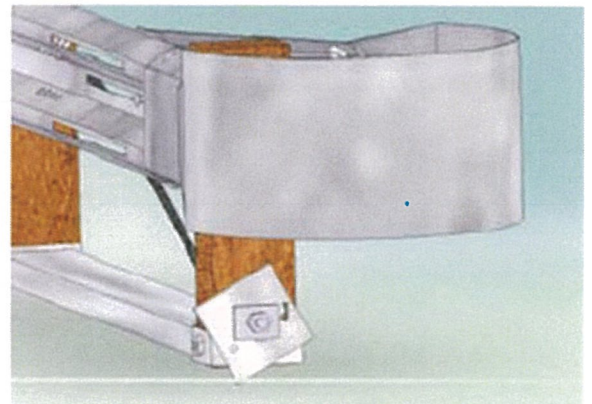
DT-BRG-PLT

Bearing Plate

Loose or misaligned



(Correct Bearing Plate)

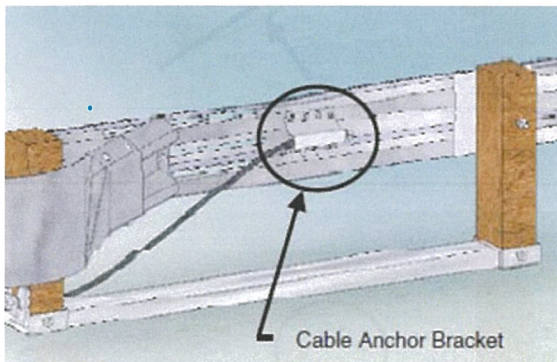


(Misaligned Bearing Plate)

DT-CBL-ANCHR

Cable Anchor Bracket

Loose or not firmly seated in rail



DT-BRDGEGAP

Poor bridge connection

3'-9" maximum between last bridge rail post and three beam post.



(350)

(2018 prior)

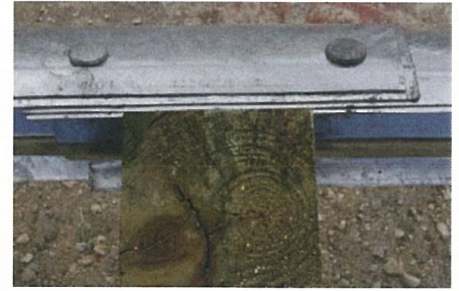
See Plan G-28

25' max span

≤ 3 posts for 27
3/4" w-beam,

Nested rail

2 wood blockouts.



GRADE ABC

ACCEPTABLE

LONG-SPAN GUARDRAIL

(MASH)

(New 2019 +)

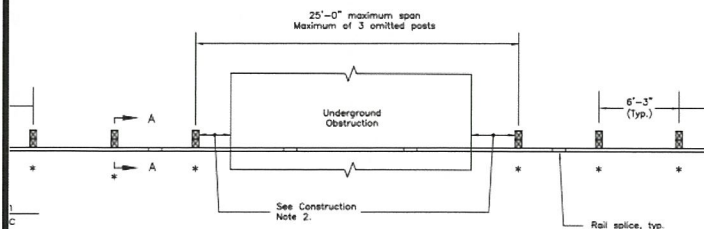
See Std. Plan G-29

25' max span ≤ 3 posts W31
mid span splice.

No nested rail

Wood CRT posts with holes

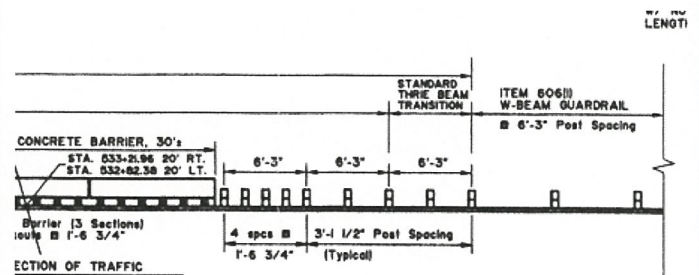
1 wood blockouts



Optional

Long-Span Concrete barrier

See design engineer for appropriate use.



BASIC END TERMINAL IDENTIFICATION GUIDE

MASH TERMINALS

MSKT (MASH)



Road Systems Inc.

SOFT - STOP (MASH)

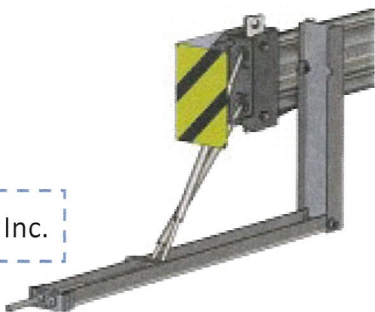


Trinity

MAX-TENSION

(MASH)

Barrier Systems Inc.



29

NCHRP-350 Terminals

SKT (350)

Slotted Rail

Extruding head
Cable anchor
Ground strut –
BETWEEN posts 1 and 2
Object marker panel flush
with extruding head
"2 square" front of head
Square handle backside



Barriers
Systems Inc.



3/4" bolt at hinged post #2 on
downstream side of the post

5/8" bolt at hinged post #1 on
upstream side of the post

Ground Strut



X-TENSION (350)



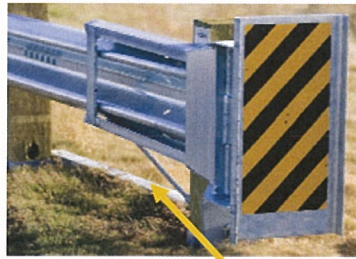
Barriers
Systems
Inc.

30

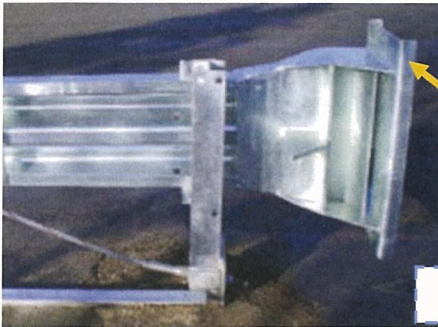
ET-PLUS

(350)

Extruding head
Cable anchor
Ground strut BEHIND
posts 1 and 2.
Object marker panel taller
than extruding head.
"1 square" front of head
Triangular handle
backside



Angle Strut



Flange

Trinity

SRT-350 (Slotted Rail Terminal)

(350)

Cable Anchor
Slotted rail
Ground Strut
Looks like BCT
But with slots,
ground strut

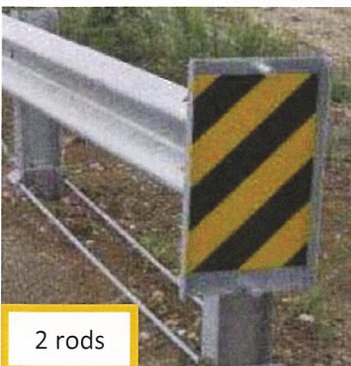


Trinity

X-LITE

(350)

Sliding panels
Slider assembly post 3
Cable anchor posts 2-3
Ground strut rods – 2
sided
Painted shear bolts to
blackouts
No steel soil sleeve tubes



2 rods

Barriers Systems Inc.

WY-BET (Box beam)

(350)



Trinity

Older Crash Tests

BCT (Breakaway cable terminal)

Cable anchor
No ground
strut
No object
marker panel



Non Proprietary

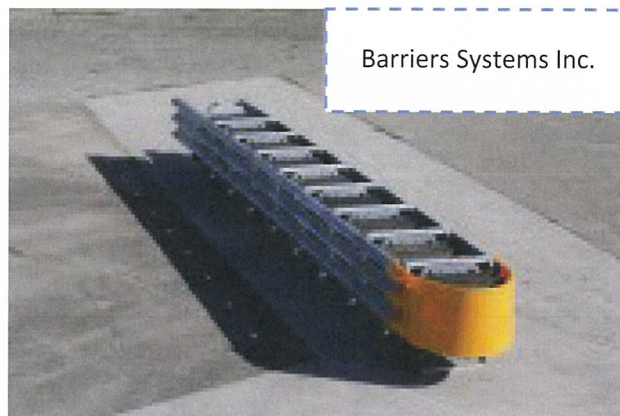
Not for $V > 40$ mph

CRASH CUSHIONS

Low Maintenance, "Self restoring"
Adhere to Manufacturer's checklist .

TAU II - R

(350)



Barriers Systems Inc.

CRT (existing)

Features:
Cable anchor
No strut
Round pipe
can on end
post
Wood
breakaway
posts in
radius.



Non Proprietary



See G-26 for new Short Radius Terminal version

REACT

(350)

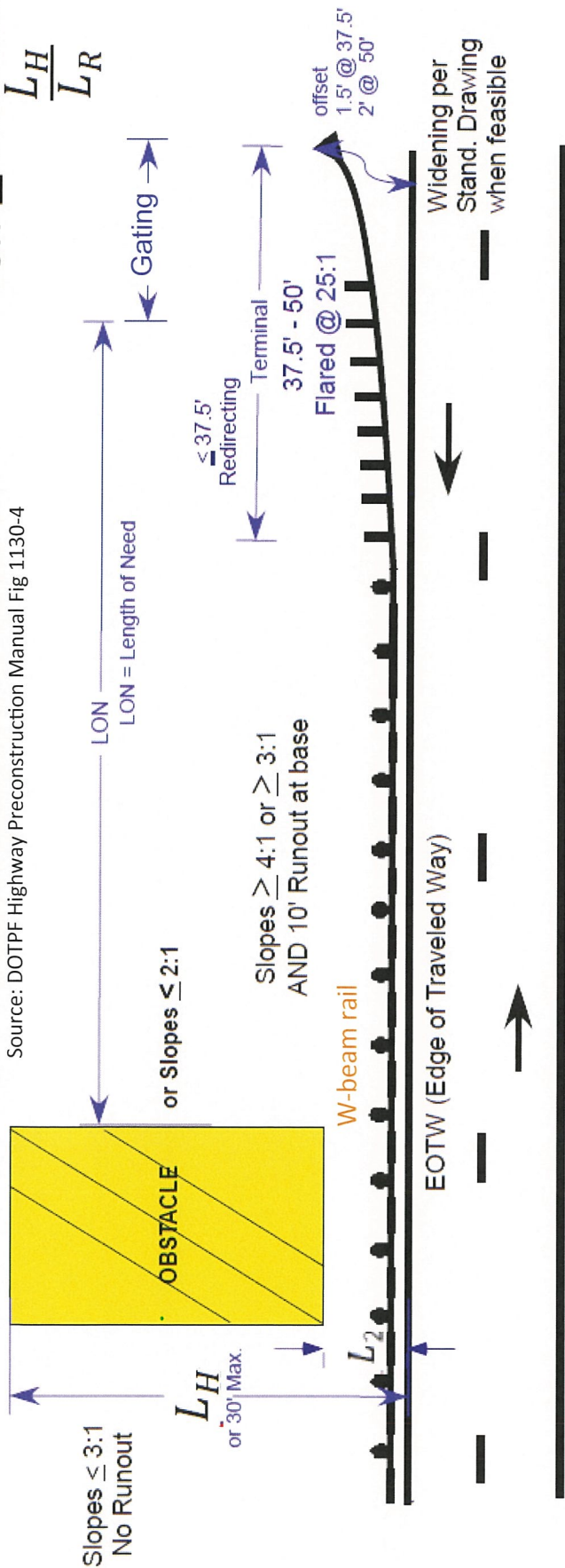


Energy Absorption

TANGENT LENGTH OF NEED

Source: DOTPF Highway Preconstruction Manual Fig 1130-4

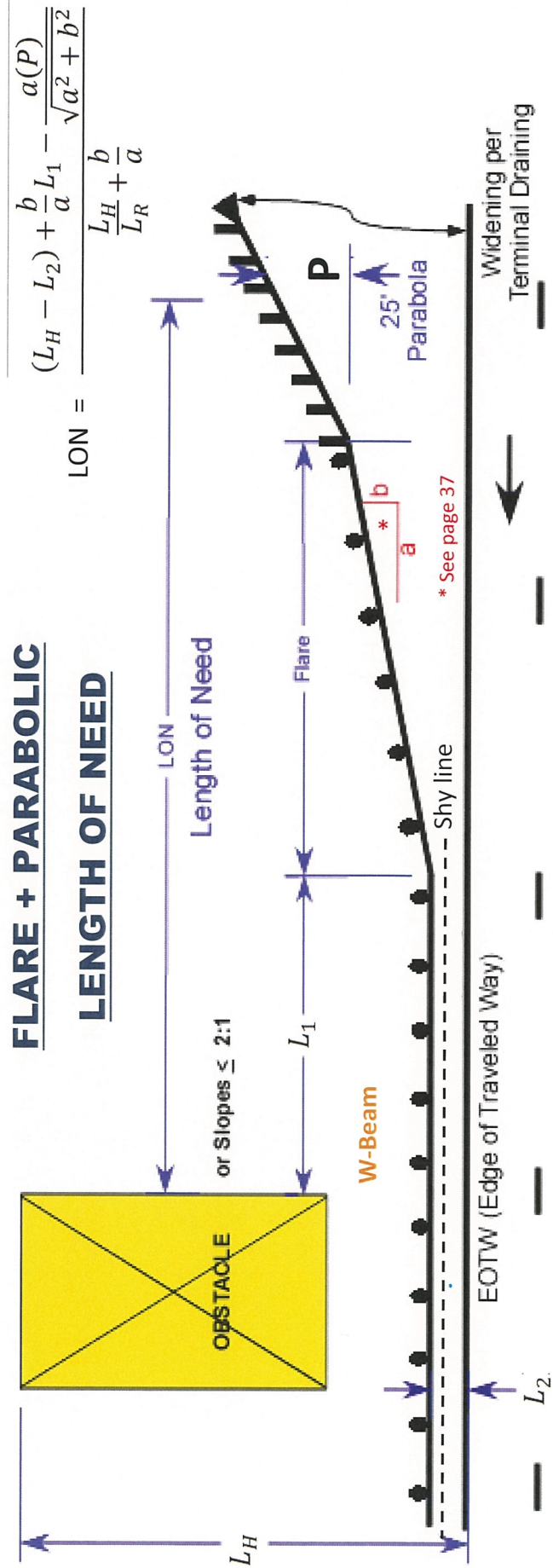
$$LON = \frac{L_H - L_2}{\frac{L_H}{L_R}}$$



35

FLARE + PARABOLIC

LENGTH OF NEED



36

Table 1130-9**Recommended Shy Line Offsets**

<u>Design Speed</u> (mph)	<u>Recommended Shy Line</u> <u>Offsets (feet)</u>
80	12.1
75	10.5
70	10.0
60	8.0
55	7.2
50	6.5
45	5.5
40	5.0
30	3.5

Table 1130-10**Flare Rates for Barrier
Design (b/a)**

<u>Design</u> <u>Speed</u> (mph)	<u>Flare Rate for</u> <u>Barrier Inside</u> <u>the Shy Line</u> (b/a)	<u>Flare Rate for Barrier</u> <u>Beyond the Shy Line</u> (b/a)	
70	1:30	1:20*	1:15**
60	1:26	1:18*	1:14**
55	1:24	1:16*	1:12**
50	1:21	1:14*	1:11**
45	1:18	1:12*	1:10**
40	1:16	1:10*	1:8**
30	1:13	1:8*	1:7**

- * Suggested maximum flare rate for rigid barrier systems.
- ** Suggested Maximum flare rate for semi-rigid systems.

Table 1130-11**Recommended Runout Length
for Barrier Advancement Length
Determination**

	<u>Traffic Volume (ADT)</u>			
	Over 10,000	5,000 to 10,000	1,000 to 4,999	Under 1,000
<u>Design</u> <u>Speed</u> (mph)	<u>Runout</u> <u>Length L_R</u> (ft.)	<u>Runout</u> <u>Length L_R</u> (ft.)	<u>Runout</u> <u>Length L_R</u> (ft.)	<u>Runout</u> <u>Length L_R</u> (ft.)
70	360	330	290	250
65	330	290	250	225
60	300	250	210	200
55	265	220	185	175
50	230	190	160	150
45	195	160	135	125
40	160	130	110	100
35	135	110	95	85
30	110	90	80	70

Tables excerpt from:

(DOT&PF
Highway Preconstruction Manual)
as of 3-22-19

Manufacturers

Trinity Industries

<http://www.trinityhighway.com/>
<http://www.energyabsorption.com/>

BSI
<http://www.barriersystemsinc.com/>

RSI
<http://www.roadsystems.com/>

Suppliers

UIS
<https://www.uisutah.com/>
Phone: 800-424-9825

Coral Sales
<http://www.coralsales.com/>
Phone: 503-655-6351

Installers

Acme Fence
<http://acmefence.net/>
Phone: 907-522-1155

McKinley Fence
<http://www.mckinleyfence.com/>
Phone: 907-563-3731

Northwest Barrier
<https://www.nwbarriers.com/>
Phone: 907-376-7498

Abbreviations

MASH: Manual for Assessing Safety Hardware.

NCHRP: National Cooperative Highway Research Program.

HPM: Highway Preconstruction Manual.

DRAFT COPY

This guide is for trial use by DOTPF Design, Construction, and/or Maintenance staff in planning or prioritizing repair and replacement of guardrail through field observation/ inspection.

Observe safe procedures when inspecting near traffic. Wear high visibility garments and use a vehicle with beacons when needed. Avoid blocking of traffic lanes for inspection. Use pullouts, driveways, and shoulders when possible during notetaking. Consider drive through video recording.

Make suggestions, edits, markups
on this pocket field guide.

Return or email compiled comments
on or before December 31, 2019

To:

scott.thomas@alaska.gov

4111 Aviation Ave

Anchorage, AK 99519-6900

Guardrail Field Inspection Rating Inventory FormDATE: _____
INSPECTOR: _____

[illegible]